

HIDDEN UNIVERSE *by* RALPH MILNE FARLEY

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AMAZING

NOVEMBER

20c

STORIES

The
**4-Sided
Triangle**

by WILLIAM F. TEMPLE

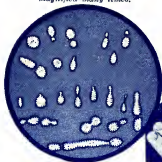


And Great Stories By **ROBERT MOORE WILLIAMS**
FREDERIC ARNOLD KUMMER JR. *and* **HOWARD**

New, Easy, Scientific Home Method that GETS RID of DANDRUFF

Which Man Are You?

Pityrosporum ovale, the germ that causes dandruff, magnified many times.



*Listerine Antiseptic kills stubborn bottle-shaped germ (*Pityrosporum ovale*) which scientists proved causes dandruff. That's the secret of Listerine's amazing results . . . why many people have turned to it for real relief.*

If you have the slightest evidence of a dandruff condition, start now with the delightful twice-a-day treatment of Listerine with massage.

See how quickly you get relief. See how those humiliating flakes and scales disappear. Watch how fresh and clean your hair becomes. Note how healthy and full of vigor your scalp feels, how quickly irritation ends.

People who have tried remedy after remedy in vain, say that the Listerine Antiseptic treatment really works—and really gets results. This confirms the brilliant results achieved in dandruff clinics where dandruff sufferers were under scientific observation.

Even after dandruff has disappeared, it is wise to guard against re-infection by occasional Listerine Antiseptic massages at regular intervals.

LAMBERT PHARMACAL COMPANY
St. Louis, Missouri

THE TREATMENT

MEN: Douse Listerine Antiseptic on the scalp at least once a day. **WOMEN:** Part the hair at various places, and apply Listerine Antiseptic right along the part with a medicine dropper, to avoid wetting the hair excessively.

Always follow with vigorous and persistent massage with fingers or a good hair brush. But don't expect overnight results, because germ conditions cannot be cleared up that fast.

Genuine Listerine Antiseptic is guaranteed not to bleach the hair or affect texture.



LISTERINE THE PROVED TREATMENT FOR DANDRUFF

Read what happened



YES!

I'll take your training. That's what S. J. Ebert said. He is making good money and has found success in Radio.

to these
two men

when I said:



NO!

I'm not interested. That's what this fellow said. Today he would be ashamed if I told you his real name and salary.

I will Train You at Home in Spare Time for a GOOD JOB IN RADIO

THESE TWO FELLOWS each clipped and sent me a coupon, like the one in this ad. Both were interested in getting a good job in Radio—a field with a future. They got my book on Radio's opportunities, found out how I trained men at home to be Radio Technicians. S. J. Ebert, 104-B Quadrangle, University of Iowa, Iowa City, Iowa, saw Radio offered him a real chance. He enrolled. The other fellow, whom we will call John Doe, wrote he wasn't interested. He was just one of those fellows who wants a better job, better pay, but never does anything about it.

Now, read what S. J. Ebert writes me and remember that John Doe had the same chance: "Upon graduation I accepted a job fixing Radio sets, and within three weeks was made Service Manager of a Radio store. This job paid me \$40 to \$50 a week compared with \$18 I earned in a shoe factory. Eight months later I went with Station KWCR as operator. From there I went to KTNB. Now I am Radio Engineer with WSUI. I certainly recommend N.R.I. to all interested in the greatest field of all, Radio."



"I WANT TO HELP YOU."

If you are earning less than \$30 a week I believe I can raise your pay. However, I will let you decide that. Let me show you what I have done for others; what I am prepared to do for you. Get my book, read it over, and then decide."

J. E. Smith.

Radio is a young, growing field with a future, offering many good pay spare time and full time job opportunities. And you don't have to give up your present job to become a Radio Technician. I train you right at home in your spare time.

Why Many Radio Technicians Make \$30, \$40, \$50 a Week

Radio broadcasting stations employ engineers, operators, station managers. Radio manufacturers employ testers, inspectors, foremen, servicemen in good-pay jobs. Radio jobbers, dealers, employ installation and servicemen. Many Radio Technicians open their own Radio sales and repair businesses and make \$30, \$40, \$50 a week. Others hold their regular jobs and make \$5 to \$10 a week fixing Radios in spare time. Automobile, police, aviation, Commercial Radio; loudspeaker systems, electronic devices are other fields

offering opportunities for which N.R.I. gives the required knowledge of Radio. Television promises to open good jobs soon.

Many Make \$5, \$10 a Week Extra in Spare Time While Learning

The day you enroll, I start sending you Extra Money Job Sheets which start showing you how to do Radio repair jobs. Throughout your training I send plans and directions which have helped many make \$200 to \$300 a year in spare time while learning. I send special Radio equipment to conduct experiments and build circuits. This 30-50 training method make learning at home interesting, fascinating, practical. I ALSO GIVE YOU! A MODERN, PROFESSIONAL ALL-WAVE, ALL-PURPOSE SET SERVING INSTRUMENT to help you make money fixing Radios while learning and equip you for full time work after you graduate.

Find Out What Radio Offers You

Act Today! Mail the coupon for my 64-page Book, "Rich Rewards in Radio." It points out Radio's spare time and full time opportunities and those coming in Television; tells about my course in Radio and Television; shows many letters from men I have trained, telling what they are doing and earning. Read my money back agreement. MAIL COUPON in an envelope, or paste on a penny postcard—NOW!

**J. E. SMITH, President
Dept. 9KM, National Radio Institute
Washington, D. C.**

**MAIL
THIS NOW**



FOR FREE BOOK OF FACTS ABOUT RADIO

**J. E. SMITH, President, Dept. 9KM,
National Radio Institute, Washington, D. C.**

Dear Mr. Smith:
Send me FREE, without obligation, your 64-page book "Rich Rewards in Radio" which points out Radio's opportunities and tells how you train men at home to be Radio Technicians. (Write Plainly.)

NAME..... AGE.....

ADDRESS.....

CITY..... STATE.....



The OBSERVATORY

by THE Editor

THIS month we begin the first serial we have published since "Revolution of 1950" by Stanley G. Weinbaum and Ralph Milne Farley. This serial, which will appear in two installments, is by Ralph Milne Farley, and we believe you will hail it as one of the best stories he has submitted to us thus far. It is typical of his more recent work in tone, with the smack of adventure of his long-remembered novels concerning the Radio Man. We know you will like it.

IN presenting the second story by Mr. William F. Temple to appear in our pages, we give you a yarn that we think far surpasses "Mr. Craddock's Amazing Experience." It has an old plot, perhaps the oldest, but it has a new twist—and we mean the newest! Triangles have always had three sides, but Temple gives this one four.

DON WILCOX, having copped a first prize with his "Death of the Moon" apparently has decided to repeat. Maybe he will, when you readers have finished with "Dictator of Peace." As we were writing this, Mr. Wilcox dropped in with a box of candy, as a token of appreciation to the readers. (We will probably get sick eating the whole box, but we pass on the thanks of the author to the readers, and regret our inability to pass the candy—it was good!)

WE'VE heard a lot about the tails of comets, and all comets are supposed to have them. However, the most unusual comet of them all has recently been discovered. It is a comet with a beard!

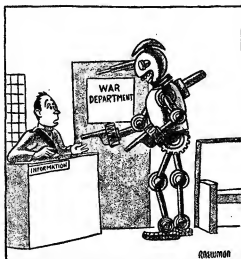
No tail, but a beard. However, don't go out

and look for the villain sneaking through the solar system in its unique disguise, because it can't be seen with the naked eye. It would take a fairly powerful telescope to find it, even if you knew where to look.

Its name is the Pons-Winnecke comet. And it's streaking its way across the heavens at 90,000 miles per hour, which figures down to about 25 miles per second, and that's pretty fast, even for comets.

It is now in the constellation of The Serpent, and can be seen in the southeastern sky about ten p. m. It has been visible for about two months,

and will remain, according to Dr. George Van Biesbroeck of Yerkes Observatory, in view for another two months. It has an orbit around the sun of about 5.83 years duration, and approaches to within 4,000,000 miles of earth.



I'd like to see the head man around here.

THE science of atoms is splitting up—no pun intended—into an increasing number of "particles." The latest, now being investigated by a group of scientists including Dr. V. P. Hess, Arthur H. Compton, Dr. Werner Karl Heisenberg, and Dr. Carl Anderson, are pos-

itrons, mesotrons, neutrinos and neutretos.

The positron, the first of the four new cosmic ray "particles" to be discovered, is like the now lowly electron, except that it's positive instead of negative. Their real interest in it isn't quite evident, until it is remembered that the electron finally found itself working at the very practical job of sending words and music around the world, and if you can do that with electrons and radio transmitters, then why not with positrons?

It was Dr. Carl Anderson who discovered the
(Continued on page 99)

NOVEMBER
1939

VOLUME 13
NUMBER 11

AMAZING STORIES

Contents

STORIES

- THE 4-SIDED TRIANGLE**.....by William F. Temple..... 6
Will Fredericks allowed his best friend to create a twin to his wife because both loved her . . . !
- THE HIDDEN UNIVERSE**.....by Ralph Milne Farley..... 24
(Part 1 of two-part serial)
Where is this weird universe in solid space to which Malcolm Frain is sending his enlisted subjects?
- WHIRLPOOL IN SPACE**.....by Miles Shelton..... 58
The stakes are high in this strange tangle of intrigue, sudden death, and treasure in the void.
- DICTATOR OF PEACE**.....by Don Wilcox..... 70
Dr. Retterlic staked his surgery against world peace. But his operation on Gade Lasher went wrong.
- LEGION OF THE DEAD**.....by Frederic Arnold Kummer, Jr.....100
"Martians, revolt!" the radio voice urged. "When my zombies come from the canals to kill—rebel!"
- MISSING: MILLIONS IN RADIUM**....by Robert Moore Williams.....116
Millions in radium were vanishing and Steve Porter was determined to find out where, and how.

FEATURES

- | | | | |
|--------------------------------------|-----|-----------------------------------|-----|
| The Observatory..... | 4 | Meet The Author..... | 134 |
| Photographing Mars In Technicolor... | 23 | Discussions..... | 135 |
| Riddles Of Science..... | 57 | Correspondence Corner..... | 142 |
| Forecast..... | 131 | Monthly Merit Award..... | 143 |
| Questions & Answers..... | 132 | Interplanetary Communication..... | 145 |
| Science Quiz..... | 133 | Illustration Contest Winners..... | 146 |

Front Cover Painting by H. W. McCauley depicting a scene from "The 4-Sided Triangle"
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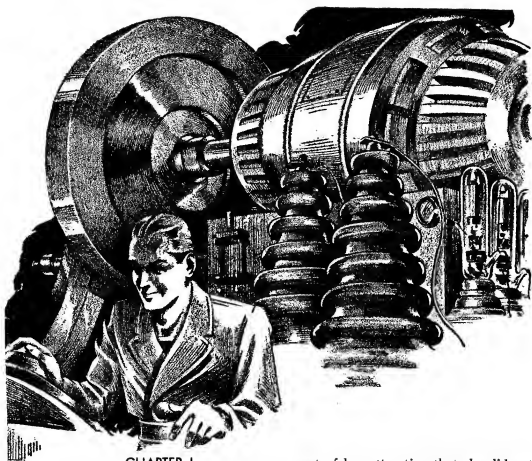
The 4-Sided Triangle

By William F. Temple

When Joan Leeton decided to marry Will Fredericks, life went dark for Bill Josephs. Then his science showed him how to add another side to the eternal triangle, and his problem seemed solved, until . . .



Tensely they
watched the
atomic duplication
of "Madame
Croignette"



CHAPTER I

Madame Croignette's Double

THREE people peered through a quartz window.

The girl was squashed uncomfortably between the two men, but at the moment neither she nor they cared. The object they were watching was too interesting.

The girl was Joan Leeton. Her hair was an indeterminate brown, and owed its curls to tongs, not to nature. Her eyes were certainly brown, and bright with unquenchable good humor. In repose her face was undistinguished, though far from plain; when she smiled, it was beautiful.

Her greatest attraction (and it was

part of her attraction that she did not realize it) lay in her character. She was soothingly sympathetic without becoming mushy, she was very level-headed (a rare thing in a woman) and completely unselfish. She refused to lose her temper over anything, or take offense, or enlarge upon the truth in her favor, and yet she was tolerant of such lapses in others. She possessed a brain that was unusually able in its dealings with science, and yet her tastes and pleasures were simple.

William Fredericks (called "Will") had much in common with Joan, but his sympathy was a little more disinterested, his humor less spontaneous, and he had certain prejudices. His tastes were reserved for what he considered the more worthy things. But he was

calm and good-tempered, and his steadiness of purpose was reassuring. He was black-haired, with an expression of quiet content.

William Josephs (called "Bill") was different. He was completely unstable. Fiery of hair, he was alternately fiery and depressed of spirit. Impulsive, generous, highly emotional about art and music, he was given to periods of gaiety and moods of black melancholia. He reached, at his best, heights of mental brilliance far beyond the other two, but long bouts of lethargy prevented him from making the best of them.

Nevertheless, his sense of humor was keen, and he was often amused at his own absurdly over-sensitive character; but he could not change it.

Both these men were deeply in love with Joan, and both tried hard to conceal it. If Joan had any preference, she concealed it just as ably, although they were aware that she was fond of both of them.

The quartz window, through which the three were looking, was set in a tall metal container, and just a few feet away was another container, identical even to the thickness of the window-glass.

Overhead was a complex assemblage of apparatus: bulbous, silvered tubes, small electric motors that hummed in various unexpected places, makeshift screens of zinc, roughly soldered, coils upon coils of wire, and a network of slung cables that made the place look like a creeper-tangled tropical jungle. A large dynamo churned out a steady roar in the corner, and a pair of wide sparkgaps crackled continuously, filling the laboratory with a weird, jumping blue light as the day waned outside the windows and the dusk crept in.

An intruder in the laboratory might have looked through the window of the other container and seen, standing on

a steel frame in a cubical chamber, an oil painting of "Madame Croignette" by Boucher, delicately illuminated by concealed lights. He would not have known it, but the painting was standing in a vacuum.

If he had squeezed behind the trio at the other container and gazed through their window he would have seen an apparently identical sight: an oil painting of "Madame Croignette" by Boucher, standing on a steel frame in a vacuum, delicately illuminated by concealed lights.

From which he would probably not gather much.

The catch was that the painting at which the three were gazing so intently was not quite the same as the one in the first container—not yet. There were minute differences in color and proportion.

But gradually these differences were righting themselves, for the whole of the second canvas was being built up atom by atom, molecule by molecule, into an exactly identical twin of the one which had felt the brush of Francois Boucher.

THE marvelously intricate apparatus, using an adaption of a newly-discovered magnetic principle, consumed only a moderate amount of power in arranging the lines of sympathetic fields of force which brought every proton into position and every electron into its respective balancing orbit. It was a machine which could divert the flow of great forces without the ability to tap their energy.

"Any minute now!" breathed Will.

Bill rubbed his breath off the glass impatiently.

"Don't do that!" he said, and promptly fogged the glass over again. Not ungently, he attempted to rub a clear patch with Joan's own pretty

nose. She exploded into laughter, fogging the glass hopelessly, and in the temporary confusion of this they missed seeing the event they had been waiting days for—the completion of the duplicate painting to the ultimate atom.

The spark-gaps died with a final snap, a lamp sprang into being on the indicator panel, and the dynamo began to run whirringly down to a stop.

They cleaned the window, and there stood "Madame Croignette" looking rather blankly out at them with wide brown eyes that exactly matched the sepia from Boucher's palette, and both beauty spots and every hair of her powdered wig in place to a millionth of a millimetre.

Will turned a valve, and there was the hiss of air rushing into the chamber. He opened the window, and lifted the painting out gingerly, as if he half-expected it to crumble in his hands.

"Perfect—a beauty!" he murmured. He looked up at Joan with shining eyes. Bill caught that look, and unaccountably checked the impulsive whoop of joy he was on the point of letting loose. He coughed instead, and leaned over Joan's shoulder to inspect "Madame Croignette" more closely.

"The gamble's come off," went on Will. "We've sunk every cent into this, but it won't be long before we have enough money to do anything we want to do—anything."

"Anything—except to get Bill out of bed on Sunday mornings," smiled Joan, and they laughed.

"No sensible millionaire would get out of bed any morning," said Bill.

CHAPTER II

Wedding Plans

THE steel and glass factory of Art Replicas, Limited, shone like a diamond up in the green hills of Surrey.

In a financial sense, it had actually sprung from a diamond—the sale of a replica of the Koh-i-noor. That had been the one and only product of Precious Stones, Limited, an earlier company which was closed down by the government when they saw that it would destroy the world's diamond market.

A sister company, Radium Products, was going strong up in the north because its scientific necessity was recognized. But the hearts of the three company-directors lay in Art Replicas, and there they spent their time.

Famous works of art from all over the world passed through the factory's portals, and gave birth to innumerable replicas of themselves for distribution and sale at quite reasonable prices.

Families of only moderate means found it pleasing to have a Constable or Turner in the dining-room and a Rodin statuette in the hall. And this widely-flung ownership of *objets d'art*, which were to all intents and purposes the genuine articles, strengthened interest in art enormously. When people had lived with these things for a little while, they began to perceive the beauty in them—for real beauty is not always obvious at a glance—and to become greedy for more knowledge of them and the men who originally conceived and shaped them.

So the three directors—Will, Bill, and Joan—put all their energy into satisfying the demands of the world for art, and conscious of their part in furthering civilization, were deeply content.

For a time.

Then Bill, the impatient and easily-bored, broke out one day in the middle of a Directors' Meeting.

"Oh, to hell with the Ming estimates!" he cried, sweeping a pile of orders from the table.

Joan and Will, recognizing the symp-

toms, exchanged wry glances of amusement.

"Look here," went on Bill, "I don't know what you two think, but I'm fed up! We've become nothing but dull business people now. It isn't our sort of life. Repetition, repetition, repetition! I'm going crazy! We're *research* workers, not darned piece-workers. For heaven's sake, let's start out in some new line."

This little storm relieved him, and almost immediately he smiled too.

"But, really, aren't we?" he appealed.

"Yes," responded Joan and Will in duet.

"Well, what about it?"

Will coughed, and prepared himself.

"Joan and I were talking about that this morning, as a matter of fact," he said. "We were going to suggest that we sell the factory, and retire to our old laboratory and re-equip it."

Bill picked up the ink-pot and emptied it solemnly over the Ming estimates. The ink made a shining lake in the center of the antique and valuable table.

"At last we're sane again," he said. "Now you know the line of investigation I want to open up. I'm perfectly convinced that the reason for our failure to create a living duplicate of any living creature was because the quotation we assumed for the xy action—"

"Just a moment, Bill," interrupted Will. "Before we get on with that work, I—I mean, one of the reasons Joan and me wanted to retire was because—well—"

"What he's trying to say," said Joan quietly, "is that we plan to get married and settle down for a bit before we resume research work."

Bill stared at them. He was aware that his cheeks were slowly reddening. He felt numb.

"Well!" he said. "Well!" (He could think of nothing else. This was unbelievable! He must postpone consideration of it until he was alone, else his utter mortification would show.)

He put out his hand automatically, and they both clasped it.

"You know I wish you every possible happiness," he said, rather huskily. His mind seemed empty. He tried to form some comment, but somehow he could not compose one sentence that made sense.

"I think we'll get on all right," said Will, smiling at Joan. She smiled back at him, and unknowingly cut Bill to the heart.

With an effort, Bill pulled himself together and rang for wine to celebrate. He ordered some of the modern reconstruction of an exceedingly rare '94.

THE night was moonless and cloudless, and the myriads of glittering pale blue points of the Milky Way sprawled across the sky as if someone had cast a handful of brilliants upon a black velvet cloth. But they twinkled steadily, for strong air currents were in motion in the upper atmosphere.

The Surrey lane was dark and silent. The only signs of life were the occasional distant glares of automobile headlights passing on the main highway nearly a mile away, and the red dot of a burning cigarette in a gap between the hedgerows.

The cigarette was Bill's. He sat there on a gate staring up at the array in the heavens and wondering what to do with his life.

He felt completely at sea, purposeless, and unutterably depressed. He had thought the word "heartache" just a vague descriptive term. Now he knew what it meant. It was a solid physical feeling, an ache that tore him inside, unceasingly. He yearned to see Joan,

to be with Joan, with his whole being. This longing would not let him rest. He could have cried out for a respite.

He tried to argue himself to a more rational viewpoint.

"I am a man of science," he told himself. "Why should I allow old Mother Nature to torture and badger me like this? I can see through all the tricks of that old twister. These feelings are purely chemical reactions, the secretions of the glands mixing with the blood-stream. My mind is surely strong enough to conquer that? Else I have a third-rate brain, not the scientific instrument I've prided myself on."

He stared up at the stars glittering in their seeming calm stability, age-old and unchanging. But were they? They may look just the same when all mankind and its loves and hates had departed from this planet, and left it frozen and dark. But he knew that even as he watched, they were changing position at a frightful speed, receding from him at thousands of miles a second.

"Nature is a twister, full of illusions," he repeated. . . .

There started a train of thought, a merciful anesthetic in which he lost himself for some minutes.

Somewhere down in the depths of his subconscious an idea which had, unknown to him, been evolving itself for weeks, was stirred, and emerged suddenly into the light. He started, dropped his cigarette, and left it on the ground.

He sat there stiffly on the gate and considered the idea.

It was wild—incredibly wild. But if he worked hard and long at it, there was a chance that it might come off. It would provide a reason for living, anyway, so long as there was any hope at all of success.

He jumped down from the gate and

started walking quickly and excitedly along the lane back to the factory. His mind was already turning over possibilities, planning eagerly. In the promise of this new adventure, the heartache was temporarily submerged.

CHAPTER III

An Incredible Proposal

SIX months passed.

Bill had retired to the old laboratory, and spent much of that time enlarging and re-equipping it. He added a rabbit pen, and turned an adjacent patch of ground into burial-ground to dispose of those who died under his knife. This cemetery was like no cemetery in the world, for it was also full of dead things that had never died—because they had never lived.

His research got nowhere. He could build up, atom by atom, the exact physical counterpart of any living animal, but all such duplicates remained obstinately inanimate. They assumed an extraordinary life-like appearance, but it was frozen life. They were no more alive than waxwork images, even though they were as soft and pliable as the original animals in sleep.

Bill thought he had hit upon the trouble in a certain equation, but re-checking confirmed that the equation had been right in the first place. There was no flaw in either theory or practice as far as he could see.

Yet somehow he could not duplicate the force of life in action. Must he apply that force himself? How?

He applied various degrees of electrical impulses to the nerve-centers of the rabbits, tried rapid alternations of temperatures, miniature "iron lungs," vigorous massage—both external and internal—intra-venous and spinal injections of everything from adrenalin

to even more powerful stimulants which his agile mind concocted. And still the artificial rabbits remained limp bundles of fur.

Joan and Will returned from their honeymoon and settled down in a roomy, comfortable old house a few miles away. They sometimes dropped in to see how the research was going. Bill always seemed bright and cheerful enough when they came, and joked about his setbacks.

"I think I'll scour the world for the hottest thing in female bunnies and teach her to do a hula-hula on the lab bench," he said. "That ought to make some of these stiffies sit up!"

Joan said she was seriously thinking of starting an eating-house specializing in rabbit pie, if Bill could keep up the supply of dead rabbits. He replied that he'd already buried enough to feed an army.

Their conversation was generally pitched in this bantering key, save when they really got down to technicalities. But when they had gone, Bill would sit and brood, thinking constantly of Joan. And he could concentrate on nothing else for the rest of that day.

FINALLY, more or less by accident, he found the press-button which awoke life in the rabbits. He was experimenting with a blood solution he had prepared, thinking that it might remain more constant than the natural rabbits' blood, which became thin and useless too quickly. He had constructed a little pump to force the natural blood from a rabbit's veins and fill them instead with his artificial solution.

The pump had not been going for more than a few seconds before the rabbit stirred weakly and opened its eyes. It twitched its nose, and lay quite still for a moment, save for one foot which continued to quiver.

Then suddenly it roused up and made a prodigious bound from the bench. The thin rubber tubes which tethered it by the neck parted in mid-air, and it fell awkwardly with a heavy thump on the floor. The blood continued to run from one of the broken tubes, but the pump which forced it out was the rabbit's own heart—beating at last.

The animal seemed to have used all its energy in that one powerful jump, and lay still on the floor and quietly expired.

Bill stood regarding it, his fingers still on the wheel of the pump.*

Then when he realized what it meant, he recaptured some of his old exuberance, and danced around the laboratory carrying a carboy of acid as though it were a Grecian urn.

Further experiments convinced him that he had set foot within the portals of Nature's mostly carefully guarded citadel. Admittedly he could not himself create anything original or unique in Life. But he could create a living image of any living creature under the sun.

A HOT summer afternoon, a cool green lawn shaded by elms and on it two white-clad figures, Joan and Will, putting through their miniature nine-hole course. A bright-striped awning by the hedge, and below it, two comfortable canvas chairs and a little Moorish table with soft drinks. An ivy-covered wall of an old red-brick mansion showing between the trees. The indefinable smell of new-cut grass in the air. The gentle but triumphant laughter of Joan as Will fozzled his shot.

That was the atmosphere Bill en-

* The only practical way of setting a stagnant circulation in motion. Pump the blood until the heart-pump works in sympathy.—Author.

tered at the end of his duty tramp along the lane from the laboratory—it was his first outdoor excursion for weeks—and he could not help comparing it with the sort of world he had been living in: the benches and bottles and sinks, the eye-tiring field of the microscope, the sheets of calculations under the glare of electric light in the dark hours of the night, the smell of blood and chemicals and rabbits.

And he realized completely that science itself wasn't the greatest thing in life. Personal happiness was. That was the goal of all men, whatever way they strove to reach it.

Joan caught sight of him standing on the edge of the lawn, and came hurrying across to greet him.

"Where have you been all this time?" she asked. "We've been dying to hear how you've been getting on."

"I've done it," said Bill.

"Done it? Have you really?" Her voice mounted excitedly almost to a squeak. She grabbed him by the wrist and hauled him across to Will. "He's done it!" she announced, and stood between them, watching both their faces eagerly.

Will took the news with his usual calmness, and smilingly gripped Bill's hand.

"Congratulations, old lad," he said. "Come and have a drink and tell us all about it."

They squatted on the grass and helped themselves from the table. Will could see that Bill had been overworking himself badly. His face was drawn and tired, his eyelids red, and he was in the grip of a nervous tension which for the time held him dumb and uncertain of himself.

Joan noticed this, too, and checked the questions she was going to bombard upon him. Instead, she quietly withdrew to the house to prepare a pot of

the China tea which she knew always soothed Bill's migraine.

When she had gone, Bill, with an effort, shook some of the stupor from him, and looked across at Will. His gaze dropped, and he began to pluck idly at the grass.

"Will," he began, presently, "I—" He cleared his throat nervously, and started again in a none too steady voice. "Listen, Will, I have something a bit difficult to say, and I'm not so good at expressing myself. In the first place, I have always been crazily in love with Joan."

Will sat up, and looked at him curiously. But he let Bill go on.

"I never said anything because—well, because I was afraid I wouldn't make a success of marriage. Too unstable to settle down quietly with a decent girl like Joan. But I found I couldn't go on without her, and was going to propose—when you beat me to it. I've felt pretty miserable since, though this work has taken something of the edge off."

Will regarded the other's pale face—and wondered.

"This work held out a real hope to me. And now I've accomplished the major part of it. I can make a living copy of any living thing. Now—do you see *why* I threw myself into this research? *I want to create a living, breaking twin of Joan, and marry her!*"

Will started slightly. Bill got up and paced restlessly up and down.

"I know I'm asking a hell of a lot. This affair reaches deeper than scientific curiosity. No feeling man can contemplate such a proposal without misgivings, for his wife and for himself. But honestly, Will, I cannot see any possible harm arising from it. Though, admittedly, the only good would be to make a selfish man happy. For

heaven's sake, let me know what you think."

Will sat contemplating, while the distracted Bill continued to pace.

Presently, he said: "You are sure no physical harm could come to Joan in the course of the experiment?"

"Certain—completely certain," said Bill.

"Then I personally have no objection. Anything but objection. I had no idea you felt that way, Bill, and it would make me, as well as Joan, very unhappy to know you had to go on like that."

He caught sight of his wife approaching with a laden tray.

"Naturally, the decision rests with her," he said. "If she'd rather not, there's no more to it."

"No, of course not," agreed Bill.

But they both knew what her answer would be.

CHAPTER IV

"Doll"

"STOP the car for a minute, Will," said Joan suddenly, and her husband stepped on the foot-brake.

The car halted in the lane on the brow of the hill. Through a gap in the hedge the two occupants had a view of Bill's laboratory as it lay below in the cradle of the valley.

Joan pointed down. In the field behind the "cemetery" two figures were strolling. Even at this distance, Bill's flaming hair marked his identity. His companion was a woman in a white summer frock. And it was on her that Joan's attention was fixed.

"She's alive now!" she whispered, and her voice trembled slightly.

Will nodded. He noticed her apprehension, and gripped her hand encouragingly. She managed a wry smile.

"It's not every day one goes to pay a visit to oneself," she said. "It was unnerving enough last week to see her lying on the other couch in the lab., dressed in my red frock—which I was wearing—so pale, and—Oh, it was like seeing myself dead!"

"She's not dead now, and Bill's bought her some different clothes, so cheer up," said Will. "I know it's a most queer situation, but the only possible way to look at it is from the scientific viewpoint. It's a unique scientific event. And it's made Bill happy into the bargain."

He ruminated a minute.

"Wish he'd given us a hint as to how he works his resuscitation process, though," he went on. "Still, I suppose he's right to keep it a secret. It's a discovery which could be appallingly abused. Think of dictators manufacturing loyal, stupid armies from one loyal, stupid soldier! Or industrialists manufacturing cheap labor! We should soon have a world of robots, all traces of individuality wiped out. No variety, nothing unique—life would not be worth living."

"No," replied Joan, mechanically, her thoughts still on that white-clad figure down there.

Will released the brake, and the car rolled down the hill toward the laboratory. The two in the field saw it coming, and walked back through the cemetery to meet it. They reached the road as the car drew up.

"Hello, there!" greeted Bill. "You're late—we've had the kettle on the boil for half an hour. Doll* and I were getting anxious."

He advanced into the road, and the woman in the white frock lingered

* "Doll" was the name he had chosen for Joan II, as he had told them on the 'phone in the morning when he had invited them to come to tea and meet her.—Author.

hesitantly behind him. Joan tightened her lips and braced herself to face this unusual ordeal. She got out of the car, and while Will and Bill were grasping hands, she walked to meet her now living twin.

Apparently Doll had decided to face it in the same way, and they met with oddly identical expressions of smiling surface ease, with an undercurrent of curiosity and doubt. They both saw and understood each other's expression simultaneously, and burst out laughing. That helped a lot.

"It's not so bad, after all," said Doll, and Joan checked herself from making the same instinctive remark.

"No, not nearly," she agreed.

And it wasn't. For although Doll looked familiar to her, she could not seem to identify her with herself to any unusual extent. It was not that her apparel and hair-style were different, but that somehow her face, figure, and voice seemed like those of another person.

She did not realize that hitherto she had only seen parts of herself in certain mirrors from certain angles, and the complete effect was something she had simply never witnessed.* Nor that she had not heard her own voice outside her own head, so to speak—never from a distance of some feet.

Nevertheless, throughout the meal she felt vaguely uneasy, though she tried to hide it, and kept up a fire of witty remarks. And her other self, too, smiled at her across the table and talked easily.

They compared themselves in detail, and found they were completely identical in every way, even to the tiny mole on their left forearm. Their tastes, too, agreed. They took the same amount

of sugar in their tea, and liked and disliked the same foodstuffs.

"I've got my eye on that pink iced cake," laughed Doll. "Have you?"

Joan admitted it. So they shared it.

"You'll never have any trouble over buying each other birthday or Christmas presents," commented Will. "How nice to know exactly what the other wants!"

Bill had a permanent grin on his face, and beamed all over the table all the time. For once he did not have a great deal to say. He seemed too happy for words, and kept losing the thread of the conversation to gaze upon Doll fondly.

"We're going to be married tomorrow!" he announced unexpectedly, and they protested their surprise at the lack of warning. But they promised to be there.

There followed an evening of various sorts of games, and the similar thought-processes of Joan and Doll led to much amusement, especially in the guessing games. And twice they played checkers and twice they drew.

It was a merry evening, and Bill was merriest of all. Yet when they came to say goodnight, Joan felt the return of the old uneasiness. As they left in the car, Joan caught a glimpse of Doll's face as she stood beside Bill at the gate. And she divined that under that air of gayety, Doll suffered the same uneasiness as she.

Doll and Bill were married in a distant registry office next day, using a fictitious name and birthplace for Doll to avoid any publicity—after all, no one would question her identity.

CHAPTER V

Complications and Tragedy

WINTER came and went.

Doll and Bill seemed to have

* Joan discovered what many film-stars discover when first seeing and hearing themselves on the screen: that one's own self appears almost as a stranger at the first detached view.—Author.

settled down quite happily, and the quartette remained as close friends as ever. Both Doll and Joan were smitten with the urge to take up flying as a hobby, and joined the local flying club. They each bought a single-seater, and went for long flights, cruising side by side.

Almost in self-protection from this neglect (they had no interest in flying) Bill and Will began to work again together, delving further into the mysteries of the atom. This time they were searching for the yet-to-be-discovered secret of tapping the potential energy which the atom held.

And almost at once they stumbled on a new lead.

Formerly they had been able to divert atomic energy without being able to transform it into useful power. It was as if they had constructed a number of artificial dams at various points in a turbulent river, which altered the course of the river without tapping any of its force—though that is a poor and misleading analogy.

But now they had conceived, and were building, an amazingly complex machine which, in the same unsatisfactory analogy, could be likened to a turbine-generator, tapping some of the power of that turbulent river.

The "river," however, was very turbulent indeed, and needed skill and courage to harness. And there was a danger of the harness suddenly slipping.

PRESENTLY, the others became aware that Doll's health was gradually failing. She tried hard to keep up her usual air of brightness and cheerfulness, but she could not sleep, and became restless and nervous.

And Joan, who was her almost constant companion, suddenly realized what was worrying that mind which

was so similar to hers. The realization was a genuine shock, which left her trembling, but she faced it.

"I think it would be a good thing for Doll and Bill to come and live here for a while, until Doll's better," she said rather diffidently to Will one day.

"Yes, okay, if you think you can persuade them," replied Will. He looked a little puzzled.

"We have far too many empty rooms here," she said defensively. "Anyway, I can help Doll if I'm with her more."

Doll seemed quite eager to come, though a little dubious, but Bill thought it a great idea. They moved within the week.

At first, things did improve. Doll began to recover, and became more like her natural self. She was much less highly strung, and joined in the evening games with the other three with gusto. She studied Will's favorite game, backgammon, and began to enjoy beating him thoroughly and regularly.

And then Joan began to fail.

She became nerveless, melancholy, and even morose. It seemed as though through helping Doll back to health, she had been infected with the same complaint.

Will was worried, and insisted on her being examined by a doctor.

The doctor told Will in private: "There's nothing physically wrong. She's nursing some secret worry, and she'll get worse until this worry is eased. Persuade her to tell you what it is—she refuses to tell me."

She also refused to tell Will, despite his pleadings.

And now Doll, who knew what the secret was, began to worry about Joan, and presently she relapsed into her previous nervous condition.

So it continued for a week, a miserable week for the two harassed and

perplexed husbands, who did not know which way to turn. The following week, however, both women seemed to make an effort, and brightened up somewhat, and could even laugh at times.

The recovery continued, and Bill and Will deemed it safe to return to their daily work in the lab, completing the atom-harnessing machine.

ONE day Will happened to return to the house unexpectedly, and found the two women in each other's arms on a couch, crying their eyes out. He stood staring for a moment. They suddenly became aware of him, and parted, drying their eyes.

"What's up, Will? Why have you come back?" asked Joan, unsteadily, sniffing.

"Er—to get my slide-rule: I'd forgotten it," he said. "Bill wanted to trust his memory, but I think there's something wrong with his figures. I want to check up before we test the machine further. But—what's the matter with you two?"

"Oh, we're all right," said Doll, strainedly and not very convincingly. She blew her nose, and endeavored to pull herself together. But almost immediately she was overtaken by another burst of weeping, and Joan put her arms around her comfortingly.

"Look here," said Will, in sudden and unusual exasperation, "I've had about enough of this. You know that Bill and I are only too willing to deal with whatever you're worrying about. Yet the pair of you won't say a word—only cry and fret. How can we help if you won't tell us? Do you think we like to see you going on like this?"

"I'll tell you, Will," said Joan, quietly.

Doll emitted a muffled "No!" but Joan ignored her, and went on: "Don't you see that Bill has created another

me in *every* detail? Every memory and every feeling? And because Doll thinks and feels exactly as I do, she's in love with you! She has been that way from the very beginning. All this time she's been trying to conquer it, to suppress it, and make Bill happy instead."

Doll's shoulders shook with the intensity of her sobbing. Will laid his hands gently on them, consolingly. He could think of nothing whatever to say. He had not even dreamt of such a situation, obvious as it appeared now.

"Do you wonder the conflict got her down?" said Joan. "Poor girl! I brought her here to be nearer to you, and that eased things for her."

"But it didn't for you," said Will, quietly, looking straight at her. "I see now why you began to worry. Why didn't you tell me then, Joan?"

"How could I?"

He bit his lip, paced nervously over to the window, and stood with his back to the pair on the couch.

"What a position!" he thought. "What can we do? Poor Bill!"

He wondered how he could break the sorry news to his best friend, and even as he wondered, the problem was solved for him.

From the window there was a view down the length of the wide, shallow valley, and a couple of miles away the white concrete laboratory could just be seen nestling at the foot of one of the farther slopes. There were fields all around it, and a long row of great sturdy oak trees started from its northern corner.

From this height and distance the whole place looked like a table-top model. Will stared moodily at that little white box where Bill was, and tried to clarify his chaotic thoughts.

And suddenly, incredibly, before his eyes the distant white box spurted up in a dusty cloud of chalk-powder, and

ere a particle of it had neared its topmost height, the whole of that part of the valley was split across by a curtain of searing, glaring flame. The whole string of oak trees, tough and amazingly deep-rooted though they were, floated up through the air like feathers of wind-blown thistledown before the blast of that mighty eruption.

The glaring flame vanished suddenly, like a light that had been turned out, and left a thick, brown, heaving fog in its place, a cloud of earth that had been pulverized. Will caught a glimpse of the torn oak trees falling back into this brown, rolling cloud, and then the blast wave, which had traveled up the valley, smote the house.

The window was instantly shattered and blown in, and he went flying backwards in a shower of glass fragments. He hit the floor awkwardly, and sprawled there, and only then did his laggard brain realize what had happened.

Bill's habitual impatience had at last been his undoing. He had refused to wait any longer for Will's return, and gone on with the test, trusting to his memory. And he had been wrong.

The harness had slipped.

CHAPTER VI

Which One?

A MAN sat on a hill with a wide and lovely view of the country, bright in summer sunshine, spread before him. The rich green squares of the fields, the white ribbons of the lanes, the yellow blocks of haystacks and gray spires of village churches, made up a pattern infinitely pleasing to the eye.

And the bees hummed drowsily, near-by sheep and cattle made the noises of their kind, and a neighboring thicket fairly rang with the unending chorus

of a hundred birds.

But all this might as well been set on another planet, for the man could neither see nor hear the happy environment. He was in hell.

It was a fortnight now since Bill had gone. When that grief had begun to wear off, it was succeeded by the most perplexing and unique problem that had ever beset a member of the human race.

Will had been left to live with two women who loved him equally violently. Neither could ever conquer or suppress that love, whatever they did. They knew that.

On the other hand, Will was a person who was only capable of loving one of the women. Monogamy is deep-rooted in most normal people, and particularly so with Will. He had looked forward to traveling through life with one constant companion, and only one—Joan.

But now there were two Joans, identical in appearance, feeling, thought. Nevertheless, they were two separate people. And between them he was a torn and anguished man, with his domestic life in shapeless ruins.

He could not ease his mental torture with work, for since Bill died so tragically, he could not settle down to anything in a laboratory.

It was no easier for Joan and Doll. Probably harder. To have one's own self as a rival—even a friendly, understanding rival—for a man's companionship and affection was almost unbearable.

This afternoon they had both gone to a flying club, to attempt to escape for awhile the burden of worry, apparently. Though neither was in a fit condition to fly, for they were tottering on the brink of a nervous breakdown.

The club was near the hill where Will was sitting and striving to find some working solution to a unique human problem which seemed quite insoluble.

So it was no coincidence that presently a humming in the sky caused him to lift dull eyes to see both the familiar monoplanes circling and curving across the blue spaces between the creamy, cumulus clouds.

He lay back on the grass watching them. He wondered which plane was which, but there was no means of telling, for they were similar models. And anyway, that would not tell him which was Joan and which was Doll, for they quite often used each other's planes, to keep the "feel" of both. He wondered what they were thinking up there. . . .

ONE of the planes straightened and flew away to the west, climbing as it went. Its rising drone became fainter. The other plane continued to bank and curve above.

Presently, Will closed his eyes and tried to doze in the warm sunlight. It was no use. In the darkness of his mind revolved the same old maddening images, doubts, and questions. It was as if he had become entangled in a nightmare from which he could not awake.

The engine of the plane overhead suddenly stopped. He opened his eyes, but could not locate it for a moment.

Then he saw it against the sun, and it was falling swiftly in a tailspin. It fell out of the direct glare of the sun, and he saw it in detail, revolving as it plunged so that the wings glinted like a flashing heliograph. He realized with a shock that it was but a few hundred feet from the ground.

He scrambled to his feet, in an awful agitation.

"Joan!" he cried, hoarsely. "Joan!"

The machine continued its fall steadily and inevitably, spun down past his eye-level, and fell into the center of one of the green squares of the fields below.

He started running down the hill even as it landed. As the sound of the crash

reached him, he saw a rose of fire blossom like magic in that green square, and from it a wavering growth of black, oily smoke mounted into the heavens. The tears started from his eyes, and ran freely.

When he reached the scene, the inferno was past its worst, and as the flames died he saw that nothing was left, only black, shapeless, scattered things, unrecognizable as once human or once machine.

There was a squeal of brakes from the road. An ambulance had arrived from the flying club. Two men jumped out, burst through the hedge. It did not take them more than a few seconds to realize that there was no hope.

"Quick, Mr. Fredricks, jump in," cried one of them, recognizing Will. "We must go straight to the other one."

The other one!

Before he could question them, Will was hustled between them into the driving cabin of the ambulance. The vehicle was quickly reversed, and sped off in the opposite direction.

"Did—did the other plane—" began Will, and the words stuck in his throat.

The driver, with his eye on the road which was scudding under their wheels at sixty miles an hour, nodded grimly.

"Didn't you see, sir? They both crashed at exactly the same time, in the same way—tailspin. A shocking accident—terrible. I can't think how to express my sympathy, sir. I only pray that this one won't turn out so bad."

IT was as if the ability to feel had left Will. His thoughts slowed up almost to a standstill. He sat there numbed. He dare not try to think.

But, sluggishly, his thoughts went on. Joan and Doll had crashed at exactly the same time in exactly the same way. That was above coincidence. They must have both been thinking along the same

lines again, and that meant they had crashed *deliberately!*

He saw now the whole irony of it, and groaned.

Joan and Doll had each tried to solve the problem in their own way, and each had reached the same conclusion without being aware what the other was thinking. They saw that one of them would have to step out of the picture if Will was ever to be happy. They knew that that one would have to step completely out, for life could no longer be tolerated by her if she had to lose Will.

And, characteristically, they had each made up their minds to be the self-sacrificing one.

Doll felt that she was an intruder, wrecking the lives of a happily married pair. It was no fault of hers: she had not asked to be created full of love for a man she could never have.

But she felt that she was leading an unnecessary existence, and every moment of it was hurting the man she loved. So she decided to relinquish the gift of life.

Joan's reasoning was that she had been partly responsible for bringing Doll into this world, unasked, and with exactly similar feelings and longings as herself. Ever since she had existed, those feelings had been ungratified, cruelly crushed and thwarted. It wasn't fair. Doll had as much right to happiness as she. Joan had enjoyed her period of happiness with Will. Now let Doll enjoy hers.

So it was that two planes, a mile apart, went spinning into crashes that were meant to appear accidental—and did, except to one man, the one who most of all was intended never to know the truth.

The driver was speaking again.

"It was a ghastly dilemma for us at the club. We saw 'em come down on opposite sides and both catch fire. We

have only one fire engine, one ambulance. Had to send the engine to one, and rush this ambulance to the other. The engine couldn't have done any good at this end, as it happens. Hope it was in time where we're going!"

Will's dulled mind seemed to take this in quite detachedly. Who had been killed in the crash he saw? Joan or Doll? Joan or Doll?

Then suddenly it burst upon him that it was only the original Joan that he loved. That was the person whom he had known so long, around whom his affection had centered. The hair he had caressed, the lips he had pressed, the gay brown eyes which had smiled into his. He had never touched Doll in that way.

Doll seemed but a shadow of all that. She may have had memories of those happenings, but she had never actually experienced them. They were only artificial memories. Yet they must have seemed real enough to her.

The ambulance arrived at the scene of the second crash.

The plane had flattened out a few feet from the ground, and not landed so disastrously as the other. It lay crumpled athwart a burned and blackened hedge. The fire engine had quenched the flames within a few minutes. And the pilot had been dragged clear, unconscious, badly knocked about and burned.

They got her into the ambulance, and rushed her to a hospital.

CHAPTER VII

Identity

WILL had been sitting by the bedside for three hours before the girl in the bed had opened her eyes.

Blank, brown eyes were, which looked at him, then at the hospital ward,

without the faintest change of expression.

"Joan!" he whispered, clasping her free arm—the other was in a splint. There was no response of any sort. She lay back gazing unseeingly at the ceiling. He licked his dry lips. It couldn't be Joan after all.

"Doll!" he tried. "Do you feel all right?"

Still no response.

"I know that expression," said the doctor, who was standing by. "She's lost her memory."

"For good, do you think?" asked Will, perturbed.

The doctor pursed his lips to indicate he didn't know.

"Good Lord! Is there no way of finding out whether she is my wife or my sister-in-law?"*

"If you don't know, no one does, Mr. Fredericks," replied the doctor. "We can't tell which plane who was in. We can't tell anything from her clothes, for they were burned in the crash, and destroyed before we realized their importance. We've often remarked their uncanny resemblance. Certainly you can tell them apart."

"I can't!" answered Will, in anguish. "There is no way."

THE next day, the patient had largely recovered her senses, and was able to sit up and talk. But a whole tract of her memory had been obliterated. She remembered nothing of her twin, and in fact nothing at all of the events after the duplication experiment.

Lying on the couch in the laboratory, preparing herself under the direction of Bill, was the last scene she remembered.

The hospital psychologist said that the shock of the crash had caused her

to unconsciously repress a part of her life which she did not want to remember. She could not remember now if she wanted to. He said he might discover the truth from her eventually, but if he did, it would take months—maybe even years.

But naturally her memories of Will, and their marriage, were intact, and she loved him as strongly as ever.

Was she Joan or Doll?

Will spent a sleepless night, turning the matter over. Did it really matter? There was only one left now—why not assume she was Joan, and carry on? But he knew that as long as doubt and uncertainty existed, he would never be able to recover the old free life he had had with Joan.

It seemed that he would have to surrender her to the psychologist, and that would bring to light all sorts of details which neither he, Joan, nor Bill had ever wished to be revealed.

But the next day something turned up which changed the face of things.

While he was sitting at the bedside, conversing with the girl who might or might not be Joan, a nurse told him a man was waiting outside to see him. He went, and found a police officer standing there.

Ever since the catastrophe which had wrecked Bill's laboratory, the police had been looking around that locality, searching for any possible clues.

Buried in the ground they had found a safe, burst and broken. Inside were the charred remains of books, papers, and letters. They had examined them, without gleaning much, and now the officer wished to know if Will could gather anything from them.

Will took the bundle and went through it. There was a packet of purely personal letters, and some old tradesmen's accounts, paid and receipted. These, with the officer's con-

* Doll had been accepted locally as Joan's twin sister.—Author.

sent, he destroyed. But also there were the burnt remains of three of Bill's experimental notebooks.

They were written in Bill's system of shorthand, which Will understood. The first two were old, and of no particular interest. The last, however — unfortunately the most badly charred of the three — was an account of Bill's attempts to infuse life into his replicas of living creatures.

The last pages were about the experiment of creating another Joan, and the last recognizable entry read:

"This clumsy business of pumping through pipes, in the manner of a blood transfusion, left a small scar at the base of Doll's neck, the only flaw in an otherwise perfect copy of Joan. I resented. . . ."

The rest was burned away.

To the astonishment of the police inspector, Will turned without saying a word and hurried back into the ward.

"Let me examine your neck, dear, I want to see if you've been biting yourself," he said, with a false lightness.

Wonderingly, the girl allowed herself to be examined.

There was not the slightest sign of a scar anywhere on her neck.

"You are Joan," he said, and embraced her as satisfactorily as her injuries would permit.

"I am Joan," she repeated, kissing and hugging him back.

And at last they knew again the blessedness of peace of mind.

For once, Fate, which had used them so hardly, showed mercy, and they never knew that in the packet of Bill's receipted accounts, which Will had destroyed, was one from a famous plastic surgeon, which began:

"To removing operation scar from neck, and two days' nursing and attention."

THE END

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PHOTOGRAPHING MARS IN TECHNICOLOR

EARL C. SLIPHER, American Astronomer, recently announced from Bloemfontein, Union of South Africa, that he had strong evidence of the fact that Mars has an abundant plant life. Mars, this year, in July, approaches closer to Earth than at any other time since 1924, and close enough to have its picture taken with a color camera. Slipher, who is a brother of Dr. V. M. Slipher, Lowell Observatory director, made the first successful color-photos of Mars on July 20.

He found strong evidence of change on the planet's surface to support his theory. The great dark spot known to astronomers as the great eye (solis lacus) has assumed a shape vastly different from that it has revealed in the past fifty years—which is a long time, considering the records available. According to the new color-photos, this area is vegetation, which is now blooming, since Mars' great eye is near the southern ice-cap, now breaking up with the advent of Martian spring. The area is roughly the size of the United States.

With the color camera, seasonal changes can now be photographed and compared, definitely proving the vegetable nature of the markings. However, Slipher has still another means of proving his theory. He intends to determine still more definitely the vegetable nature of the great eye, by using a special chlorophyll detector, which registers vegetation density with great accuracy.

Due to the absence of the usual vapor and haze that accompanies the melting of the Martian southern snows, observations with the color camera have been eminently successful. The planet as a whole is pale now, but distinct color changes, of a progressive nature, have been noted for three nights.

Mars approached closest to earth on July 27, when it was only a trifling 36,000,000 miles away. After that date Slipher will use his detector, and continue his color-photography at Johannesburg, in an attempt to discover still more about the flora of Mars—definitely proved to be such by the color camera!

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Cathcart felt instinctively that Freundlich was holding something secret in this laboratory

The Hidden Universe

By Ralph Milne Farley

Robert Cathcart set out to find his brother, and the trail led to a weird universe in solid space!

CHAPTER I

Multimillionaire Man of Mystery

FRAIN City, New Jersey, center of the far-flung industrial empire of billionaire Malcolm Frain.

On all sides towered factory buildings, devoted to the manufacture of hundreds of products—massive machinery, household utensils, hairpins, locomotives, battleships, and cosmetics. Each factory bore the name of Frain, and from twin flagstaffs on every building fluttered the stars and stripes; and another flag: a red "F" in a white circle on a blue field. The streets were jammed with trucks, carting the Frain products to the Hudson River docks, there to be loaded on Frain Line steamers which would carry them to the principal ports of the world.

Along one of these crowded thoroughfares walked two truckdrivers in trim black uniforms and shiny puttees. One was stocky and swarthy; the other, tall and blond and sandy haired.

The dark one stared aloft at the towering factories. "They say Malcolm Frain is worth twenty billions—billions, Cathcart, not millions!" He spat vehemently, as though to show his con-

tempt for all that wealth.

Cathcart grunted absently. There were lines of worry on his blond face, and his thoughts were far away from any consideration of Malcolm Frain's fabulous fortune.

His swarthy companion, nettled at his lack of response, snapped, "What's eating you, Cathcart?"

"It's this mysterious hocus-pocus that pervades the Frain organization," Cathcart replied. "Here we are, Terro, on our way to Headquarters, and we haven't the slightest idea why they have sent for us! Maybe they're going to ship us off to one of the Frain colonies, without even asking if we wish to go. Where *are* these colonies, anyway? This secrecy is getting on my nerves."

"They don't keep any secrets from me," Terro taunted. "Perhaps they take you for a reporter—Frain won't let a newshawk set foot this side of the Hudson. I know why they sent for *me*. I'm going to be promoted and shipped to one of the colonies."

"Which one?"

Terro shrugged. "No use to ask that. They never tell—just ship a feller off. Maybe a banana plantation, or one of

his African rubber forests. Maybe his Arabian oil-fields. Not that I care; to hell with 'em, so long as I get what's coming to me."

"Yes, they never tell," said Cathcart, as though talking to himself. "And no-one ever writes back. I haven't heard once from my brother."

"Well, I should worry," Terro laughed irritably. "My new job will mean less work, more pay, and a change from wheeling these damn trucks day and night. And there should be a good chance for graft, that far from Headquarters."

The two drivers reached a towering building of shiny black tile, chromium plate, and translucent glass blocks. Entering, they gave their names to a black-uniformed official at a desk just inside the door, and were directed to a reception hall at the rear of the ground floor.

AS Cathcart and Terro started down the corridor, they had to step aside to make way for a jostling throng of about five hundred men, women, and children, laden with bundles, bags, and suitcases. These people were being herded out of the building by a score or so of black-uniformed guards. The men looked exalted and determined; the women, somewhat apprehensive; the children, happy and excited.

These folks were en route to one of the Frain colonies, the two truck drivers knew. Turning, Cathcart and Terro watched the colonists tramp out the front door, to be loaded into busses and driven toward the docks, bound no one knew whither. Cathcart pictured his brother departing like that, six months ago. In one of the pockets of Cathcart's black blouse was the last letter he had received from Johnny. He had read it so often he knew it by heart:

Dear Bob:

I've got my chance at last. Am being

shipped to one of the Frain plantations. Africa, I believe, although the employment office is a bit indefinite about that.

But they did impress upon me that the mail-service between there and the States is irregular, and that the operations of the plantation are secret. So I was told to notify my family not to worry if they don't hear from me. You are my only family, so this is the notification.

Anyway, my new job is a promotion, and means a big raise in pay; so congratulate me. I'll write again as soon as permitted.

*Yours,
John.*

Fine for Johnny, winning a promotion in one of the most reputable and outstanding industrial organizations of America! Yet somehow the letter hadn't rung quite true, although Bob Cathcart at the time had been so engrossed in chemical experimentation that he had been only vaguely conscious of that fact.

Two months later the entire technical staff of the Chemical Foundation for which Cathcart worked had suddenly been laid off. After another month, unable to secure any work in his own line, and worried because he had not heard from Johnny again, Cathcart had secured a job with the Frain Truck Lines, Inc., not only because it was the only work available in the depths of a depression, but also in the hope that he might thereby get some clue as to what had become of his brother.

Cathcart had telephoned the Frain employment office several times to inquire about his brother, but always was put off with the vague reply, "He's well, and likes his new work. Write him, care of us, and we'll forward your letter." Cathcart had written repeatedly, but no reply had ever come.

With a sigh, Cathcart now turned and

followed Terro down the hallway to the room which the doorman had indicated. It resembled the waiting-room of a railroad station. About two hundred men—most of them in black uniforms, but some in business suits, and a few in overalls—sat on the benches, chatting in whispers or rustling newspapers, or shifting nervously in their seats.

As Cathcart and Terro sat down in a vacant space, Cathcart's attention fell on the headline of a New York tabloid newspaper lying besides him:

MULTIMILLIONAIRE MAN OF MYSTERY

Beneath this headline was a picture, evidently a composite, showing Malcolm Frain's head combined rather crudely with a black uniformed body. The caption was:

Is Malcolm Frain a philanthropist, or a financial wizard, or both, or neither? (Story, page 16).

Cathcart turned to page 16, and read:

How is Malcolm Frain able to hire one thousand unemployed a day, when all the other industrialists are laying men off? Even Frain's billions can't last forever, for unlike the Federal Government, he does not have unlimited credit—nor any Social Security funds which he can divert to finance a deficit.

And although his price-cuts are threatening the solvency of his competitors, and are keeping all the factories of his private city over in Jersey operating full time; yet no business can endure without profits, and profit seems impossible at the prices which Frain is charging.

Nevertheless Malcolm Frain is today doing more to relieve unemployment than all the Federal, State, and Municipal agencies combined!

What is Frain's secret? Why is he hiring all these men? What is he

doing with them?

Certainly his factories, even running three shifts as they are, are not large enough to absorb all the men whom he is hiring. The New Jersey State Commissioner of Labor refuses to give out any information as to the growth of Frain's employment, but this was to be expected in view of Frain's strangle-hold on the politics of that state.

Perhaps Malcolm Frain is shipping these thousands of new employees to his rubber forests, his banana plantations, and his oil fields; but, after the beating which his armed thugs gave our reporter yesterday (see picture), we are inclined to hazard the guess that there is something rotten about the whole performance, although we are not yet quite prepared to accuse him of being a second 'Bishop of Bingen'.

Cathcart whistled. "That comes darn close to libel!" he exclaimed.

Terro reached for the newspaper. "Hm! It's okeh with me anything they say about the boss. He's making plenty jack out of our labor, without him turning a hand."

"He's giving both of us jobs at good pay in the depths of a depression," Cathcart reminded him.

"Phooey!"

Terro spat on the floor, and began spelling out the words of the newspaper-item. When he reached the end, he asked, "Who's this Bishop of Bingen they're talking about?"

"Oh, a fellow years ago, who offered to put an end to poverty and unemployment. He herded all the paupers who answered his advertisement, into a hall. Then he burned the hall down over their heads, thereby making good his promise."

Suddenly Terro sat erect, whistled softly, and nudged Cathcart. "I'll take

a chance at being burned, if *that's* the torch." Terro nudged Cathcart again, and grimaced toward a slim girl in the black uniform of the Frain guards, who had just entered the waiting-room, and was mounting a platform at one end of the hall. On her black military cap was the word "INSPECTOR."

CATHCART studied the girl appraisingly. Strange that such a young girl should occupy such a high position in the ranks of the Frain organization! Strange even that one of her sex should be in uniform at all!

As Cathcart stared, his curiosity changed to admiration. The cool calm assurance of the girl intrigued him. And yet, for all her evident capability, she was not the mannish type. Not in the least! Not even boyish. Her features were pink-and-white and cameo-cut. Vagrant wisps of copper-gold hair strayed from beneath the rim of her military cap. Her lips, though firm, were delicately curved. Her figure, in spite of its alertness, was soft with feminine roundness.

Cathcart's keen gray eyes crinkled, and he nodded quietly to himself.

His thoughts were interrupted by the harsh voice of Terro, "Some baby, eh? The guy that gets her is going to have a soft job from then on. She's Frain's brat."

"So that is Donna Frain!" breathed Cathcart.

The girl herself now spoke in a clear cool voice, "Attention, please! You all know what you have been called here for—promotion to positions in one of the colonies—I am not at liberty to say which. Your pay will be at least twice what you are now getting. Those of you who are chosen for special work will receive even more. Your immediate family will accompany you. But you must sign up for five years."

Five years! Those words staggered Cathcart out of his rapt study of Donna Frain. Would the bare chance of being sent to the same colony as his brother, be worth the risk of being sent to the wrong colony and getting stuck there for five years?

Donna Frain went on, "The mails are very uncertain, and the operations of my father's colonies are rather secret; so—"

Yet, Cathcart had learned as much from that well-remembered letter in his breast pocket. Again he mused upon his brother's fate. Had Johnny and his fellow colonists been put to death, as the legendary Bishop of Bingen had killed the paupers to cure their poverty? Was that to be his own fate too, if he followed in his brother's footsteps? He turned his attention back to the flaming-haired girl, just in time to hear her conclude her address with the scarcely veiled threat, "If you do *not* accept, we may have to replace you with other prospective colonists. Remember: jobs are scarce these days. But if you are prepared to accept, or wish further information, please wait here until your name is called; then report to whatever inspector is in charge of the room indicated."

Cathcart's eyes followed her trim uniformed figure, as she walked briskly from the hall. Surely *she* would not be a party to any sinister trickery. What a girl! And yet how unattainable—the daughter of America's richest multimillionaire, and a high-ranking official in the organization in which Cathcart himself was a mere pawn.

Terro's rasping voice obtruded upon his reverie with, "Did it ever occur to you what a sweet racket a fellow would have if he could only get something on Malcolm Frain?" Terro's narrow-eyed swarthy face was thrust close to Cathcart.

Accumulated irritation burst from Cathcart. "Did it ever occur to *you*," he snapped, "what a sweet chance you'd have of getting kicked out of the service, if someone got something on *you*?"

Just then he heard his own name being read off: "Robert Cathcart. Room 2." He got up and headed for the designated doorway.

IN the cubicle to which Door No. 2 admitted him, Inspector Dona Frain sat at a desk. Her military cap was off, exposing in its full glory the aureole of her burnished copper-gold hair. Her perfect features showed even more perfect at close scrutiny. Her jade-green eyes were cool and inscrutable.

Cathcart grinned ingratiatingly. Snapping into action in front of the desk, he began, "Miss Frain—"

"Address me as 'Inspector'!" she interrupted with dignity, although not unkindly. "Surely you have been long enough in the service to know that."

"Yes, Inspector," Cathcart replied with assumed meekness, but there was an irrepressible twinkle in his gray eyes.

"That's better." Donna Frain softened somewhat. "Well, Cathcart, how would you like the position of assistant chemist in one of our colonies?"

"Very much, Inspector! I had expected merely another trucking job." His gray eyes glowed at the thought of test-tubes and bunsen-burners again.

"You would have been chosen before," Donna Frain continued, "but we first had to check up and make certain that you had no newspaper connections. You know the rule against reporters?"

"Yes, Inspector."

"Well, our Secret Service has checked up on you, and has found, that you are not a newspaper-man. Also that you are a bachelor with no immediate relatives. You have received no mail, except technical chemical communications,

since you have been with us. You have been a loyal and industrious member of the Frain organization. You can start for your new job this afternoon, if you wish."

"May I ask, Inspector, the nature of the chemical work which I am to undertake?"

"I suppose you are leading up to an inquiry as to where you are to be sent?" Her pretty features hardened. "Employees of Malcolm Frain ask no questions; and, when they do, they receive no answers. And now I shall ask *you* a question. Why did you not apply to us for work as a chemical engineer in the first place?"

"Hasn't your vaunted Secret Service found out that for you?" he countered, a bit maliciously.

"Cathcart!" she snapped. "Answer my question."

He did some quick thinking and finally decided to risk the truth. "Well, Miss, I'll be frank with you. I wanted to get sent to one of your colonies, and it seemed to me that I'd have a better chance as a mere laborer. I am trying to find my brother John, who disappeared to one of your colonies six months ago."

"Um! And it never occurred to you to come directly to Headquarters and ask about him?"

"I asked repeatedly, but was always given the same evasive answer. I wrote repeatedly to my brother, but never received a reply."

"Well, we'll find out right now." She pushed one of the red buttons of an inter-office switchbox on her desk, and lifted her telephone from its cradle.

"Hello! Records Department? Inspector Donna Frain speaking. Send the dossier of John Cathcart down to Cubicle 2 in the waiting-room. Right away." She hung up, and turned to Bob Cathcart with just the trace of a smile

on her perfect features. "I rather think that we can assign you to the same colony as your brother."

He grinned back at her, and said with feeling, "Thank you very much, Inspector. And now may I ask *you* a question? Do you ever visit this colony?"

"What's that to you?"

"A workingman is always interested in what sort of superiors he works for." Cathcart's manner was respectful and disarming.

"I thought you were interested in finding your brother."

"I am. But five years is a long time to sign up for, without additional inducements."

She colored slightly. "Cathcart!"

A knock. The door opened, and a messenger came in, deposited a large manila envelope on the desk, and withdrew. Donna Frain covered her embarrassment by fumbling in the envelope, and studying its contents. Bob Cathcart continued to stand at attention; he knew when not to go too far.

"Yes," said Donna, returning the file to its container. "Your brother John, although formerly assigned to another of our colonies, is now at the one to which you are about to be sent. You will find him there at Town No. 13. Is that sufficient to you?"

"No," Cathcart replied in a quiet level voice. "You haven't yet answered my question. Shall I ever see you at that colony?" An amused smile hovered around the corners of his mouth.

Her own eyes fell. "I plan to visit that colony frequently," she said softly.

"Good!" Cathcart exulted. "Then I shall gladly enlist in your service."

CHAPTER II

Facilis Descensus Avernii

DONNA Frain smiled up at him. "I think that we shall enjoy working

together, Cathcart." Then, with a resumption of her crisp military manner, "Return to the Truck Lines barracks and pack at once. Report back here at four o'clock. Everything which you need for immediate use you had better carry, as it may be a month before your boxes will follow. We will notify your dispatcher of your transfer."

As Cathcart briskly saluted and strode from the cubicle, his pulses were racing. Undoubtedly because his quest for his brother was so nearly at an end, he told himself.

Terro was no longer seated on the bench outside in the waiting-room. Cathcart grinned. This meant either that that pest had been called into some other cubicle than Donna Frain's, or that he had gotten cold feet about being shipped off to an unknown destination. Either alternative was satisfactory to Cathcart.

Humming to himself, Cathcart ran down the steps of the garish Administration Building, and strode with the stream of dock-bound trucks to the barracks behind the huge terminal garage of the Frain Truck and Bus Lines.

On the stroke of four he was back at the Administration Building with two suitcases, and was herded into a hall with several hundred men, women, and children, laden with bags and bundles. Terro was among them; too bad! An Inspector checked off the names of the group. Then they were all marched out of the building, loaded into busses, and driven to the docks.

The men and women in the bus with Cathcart were fidgety and uneasy. They conversed in nervous whispers. They stared out of the windows at the passing buildings as though loath to leave these familiar scenes. Even the children, sensing the moods of their parents, were wide-eyed and subdued.

Several of the women were hunched and sobbing. One of them, seated next to Cathcart, timidly inquired, "You—you're in uniform—one of Mr. Frain's soldiers. You think it's all right, don't you? For us to go to the colonies, I mean."

Cathcart did his best to reassure her, but his words lacked conviction. After all, what did he himself know about their mysteriously concealed destination?

The busses drew up at a huge waterfront storehouse, a new one which had been in the process of construction when Cathcart had first come to work for the Frain Industries three months ago. Here, as the building had neared completion, Cathcart had brought truckload after truckload of fine silt from the laboratories of the Frain Chemical Foundation. As a chemist himself, he had wondered why and how all this dirt was being treated in the laboratories; but one learns in the service of Malcolm Frain not to ask questions.

At this building the five hundred colonists were now herded into a large vacant storeroom. Cathcart's insignia, a gold autowheel on each lapel, were removed, as were the insignia of such other colonists as wore the black uniform: cog-wheels for the factory employes, wings and propeller for the air lines, etc. All baggage was thoroughly searched. White brassards bearing the letter "C" in black, were pinned onto the arms of all the colonists.

"Do we wear this until we reach the colony?" Cathcart asked, as the guard was pinning his on.

The guard stared at him intently, suspiciously. "Are you trying to be funny?" he asked. "How long a trip do you think it is?"

"Well, how long is it?" Cathcart asked.

"None of your business! If you know what's good for you, you won't get too nose-y."

Cathcart shrugged his broad shoulders and subsided.

HE glanced around the storeroom at the cowering colonists and the bustling officious guards. It was a bare concrete room, with sprinkler heads and water pipes overhead.

Names were now read off a list, Putorius Terro's among them, and about a hundred of the colonists were herded with their baggage into a large elevator, the doors of which slid soundlessly shut behind them.

Cathcart and the rest of the colonists waited, alert and nervous. About three-quarters of an hour elapsed; then the elevator doors opened, and a second batch of colonists were herded in.

Girls wearing the conventional Frain uniform now went among the remaining colonists distributing coffee and sandwiches. Three-quarters of an hour later another hundred colonists entered the elevator. Cathcart looked at his wrist-watch; the time was seven o'clock. Evening shadows were falling; the lights were turned on in the huge storeroom.

As he waited, Cathcart studied the storeroom in which he stood. He remembered it well, for it was to this very room that he had trucked his loads of silt; only then there had been no elevator, not even an opening for an elevator shaft either up or down where the elevator doors now indicated one to be. He studied his fellow-colonists; the wait was getting on their nerves, men and women were pacing up and down, or nagging at each other, children were whining or snarling. Cathcart turned his thought to "Inspector" Donna Frain.

He was still day-dreaming about the

flaming-haired girl, when at eight-thirty it finally came his turn, as one of the last hundred. The elevator-cage into which they were led was lined with some smooth iridescent composition, without so much as a crack to give view of the shaft in which it hung. The doors slid shut, and then were wedged solidly in place by guards turning handwheels on the inside, as though the intention was to seal the elevator-car hermetically. Cathcart stared up at the top of the car, which was dotted with incandescent electric lights, interlaced with inert glass tubes.

He was vaguely attempting to puzzle out the purpose of these tubes, when

his thoughts were interrupted by a woman's scream from the far side of the car: "Let me out! Where are you taking us?" She began to hammer on the walls with her hands.

One of the guards standing nearby seized the woman firmly, but not unkindly, and tried to quiet her; but as a result she





Instantly the whole elevator-car was in a turmoil. The guards brandished weapons menacingly

merely shrieked the louder. Her terror was contagious. Cathcart, sensing trouble, pushed his way toward her through the throng; but a husky man in overalls, evidently the woman's husband, reached the spot ahead of him and drove a hamlike fist to the guard's jaw. The guard went down.

INSTANTLY the whole elevator-car was in a turmoil. Women, and even some of the men, clamoring: "Let me out! Let me out!"

One of the guards grabbed Cathcart's elbow. "Hey, you! You look sane. Help

us quell this riot."

Clubs began to fly, cracking skulls. Cathcart flung a protective arm about an hysterical woman, drew her out of the melee, and shook her gently until her eyes lost their fixed stare and returned to normal. He slapped a man across the mouth, who was just about to scream.

The authoritative voice of the Corporal in charge of the guards sounded above the din: "Quiet! Quiet, youse! There is no way to get out of this room until we reach the colony, so youse might just as well shut up."

"Colony!" "Are we already on the way?" Those who were still on their feet gasped, and then subsided into complete and sodden silence. In the lull, Cathcart noted that the lights on the ceiling had gone out, and that some of the glass tubes were now glowing white.

Twenty minutes later the doors on the opposite side of the elevator swung open upon a concrete storeroom, very much like that from which they had entered the elevator. The Corporal in charge handed over a packet of papers to another Corporal who stood waiting with his own squad outside.

"Had a riot," the first Corporal laconically reported. "Tried to avoid it, but I had to keep order."

"Okeh," the other replied, unimpressed. "Hey there, you colonists, cart out the wounded." Then, turning to one of his men, "Count 'em, and then send to the hospital for the necessary number of stretchers."

Cathcart helped carry out and lay on the hard cold concrete floor those who had been battered, about twenty in number. Cathcart's jaw was set, and his gray eyes were slits. Although he realized that the guards had used their clubs only as a last resort, and that otherwise the colonists would have done

more harm to themselves and each other than the guards had done; yet this brutality, necessary though it was, stirred up in him an instinctive resentment.

The doors of the elevator closed behind him with a fatalistic finality.

"Come on, the rest of you," commanded the new Corporal, "and make it snappy!"

Through a wide high doorway they were led out onto a driveway in the open. An indescribable air of unreality pervaded the place. Far above their heads a solid unmoving unruffled bank of white clouds shed a shadowless radiance as bright as the full glare of sunlight.

Flush behind the concrete storehouse from which they had just come, there rose a sheer cliff of rough white stone, to merge with the clouds above. In front of them, and away to the left, stretched a level plain of rich farming land, with here and there a village or a wood in the distance.

Nothing so very unusual, except the flat unchanging sky and the steep cliff; and yet none of the colors of the landscape were quite right, and there was an eerie sighing sound of wind overhead.

Off to the right, and also abutting the cliff, was a chromium and black office-building, reminiscent of Headquarters in Frain City, N. J., but smaller; and beyond it lay several substantial brick barracks, flanked by a sizeable small city.

According to Cathcart's wrist-watch, it was now 9:00 p. m., but the clock on the office-building said quarter past four! He set his own watch to the changed time.

THE Corporal marched them to the barracks, where the single men and women were assigned to neat but rather

bare rooms, and the families to suites. They were all instructed to stow their belongings and then report to the Administration Building in fifteen minutes, leaving the children behind. Nurses would take care of the children. There was no sign of the four instalments of colonists who had preceded them.

At the Administration Building, they were herded into a lecture room. As soon as they were comfortably seated, an Inspector with white hair and a jolly friendly face mounted the platform and addressed them.

"Welcome to Utopia," he began. "It is unfortunate that your entry into this new state of existence should have been marred by rioting, suppressed by what may seem to you to have been unnecessary severity. But order *must* be preserved in this colony, for your own good.

"You will find that life here among us is idyllic far beyond anything of which you have ever dreamed. Each adult individual will be permitted to pick out a city lot of land or a country tract. On this lot or tract he or she can build a home on easy terms. Homesteads can be exchanged, subject to just merely enough supervision to guarantee that no-one gets cheated. Your land can never be taken away by lawsuits, your pay cannot be garnisheed, and there are no taxes. There is no relief, for here everyone has a job.

"Medical attention is free, and one's pay continues indefinitely during any bona fide disability or illness. Education for the children is free, and they can continue in grammar school, high school, or college, as far as their abilities entitle them. You will all spend tonight in the barracks. Tomorrow you will be shipped to the scene of your new jobs. Any question?"

"How about churches?" asked one of the women.

"Each of the towns has at least one church," the Inspector replied, "and your places of work have been selected with a view to your expressed religious preferences."

"Where are we?" asked Cathcart.

"I was just coming to that. You are no longer in the world. You are not even on another planet of the solar system. You are not even in the same universe as that in which you were this morning. The cage which brought you here and which you thought was a mere elevator, is a status-changing machine, which has transported you into a new state of existence. Even time here has no relation to the time of the world from which you have come; for example, a person who left the world *before* you did, and who spent the same length of time getting here, may not yet have arrived." He paused dramatically.

Cathcart broke the awed silence by asking, "And conversely a person who has not yet left the earth may already be here?"

He had merely been trying to relieve his tenseness by a little humor, but to his horrified surprise the Inspector replied, "Exactly. So you can see why our newspapers here carry no news of contemporary events of the world. Events there are not contemporary."

Cathcart's jaw dropped. Hooley? And yet the Inspector had spoken with evident sincerity. Cathcart sat erect, and listened with fascinated intentness as the Inspector continued, "The universe to which you have been accustomed consists of specks of matter—stars and planets—floating in empty space. But this universe, where we now are, consists of holes in solid space."

"Sort of like a cheese," someone whispered behind Cathcart. One of the women colonists tittered nervously.

Meanwhile the Inspector was saying,

"We are in one of these holes now. Other such holes have been discovered and colonized. This one is almost exactly thirty-nine and a half miles square, and its height has been estimated at about four miles. There are no seasons here. Every day is exactly twelve hours long, and so is every night. Rain falls only at night. A luminous glow takes the place of the sun. For convenience, we call thirty-two days a month, and twelve months a year. Any more questions?"

There were none. The audience was too dazed to ask any.

"You will now return to the barracks," the Inspector concluded. "Let me give you all a final caution. This entire world is governed by the will of Malcolm Frain, who is here known as 'the Boss'. You are no longer citizens of the United States of America. But, if you work faithfully and keep the peace, you will be more prosperous, better cared for, and happier than would have been possible in the old world which you have now left behind you—forever!"

A STUNNED silence greeted this last announcement.

Then a woman shrieked despairingly, "Forever?"

And a man cried out, "We signed up for only five years!"

An ominous rumble began to swell through the crowd, but it petered out again. The colonists were so stunned by what had gone before, as to be numb to this final blow.

The Inspector's round face was sympathetic and his voice was soothing, as he continued. "Dear friends, when you have been here with us for a little while, you will not wish to return to the earth. And you will appreciate the wisdom of the Boss in not letting you return. For, if stories were spread

about this wonderful domain of his, he would be mobbed by millions, demanding to be sent here. This idyllic utopia is available only to picked individuals like yourselves. Now return to your lodgings."

As Cathcart filed out of the hall with the others, his mind was in a daze. All this preposterous talk about a new universe might be acceptable to the common run of these colonists; but Cathcart was a scientifically trained man, a chemist, and to him it was simply absurd!

Never in his life had he felt so cooped up, so utterly alone. Even the fact that his brother Johnny was living somewhere in this vast cavern, did not console him. So he stalked moodily to his room in the barracks, shut the door, sat down heavily on the sole chair, cupped his chin in his hand, and brooded.

After a while he got up, and stood by the window, staring out at the rolling landscape and the luminous silver sky. And, as he stared, the sky suddenly paled and darkened. Within a minute's time, night reigned outside, peppered with the twinkling lights of distant villages and scattered farms, although overhead there was a dense black void without a single star. Cathcart groped his way back through the darkness until he found and snapped-on the light-switch. Then he glanced at his wrist-watch—just a minute or two after six o'clock. A gong rang in the corridor. Cathcart opened his door and looked out. The corridor was lighted, and colonists were emerging from their rooms.

"What's up?" he asked of a freckle-faced young man about his own age who was coming down the hall.

"Grub, I guess," the other replied, holding out his hand and grinning engagingly, "Name's Mick—, I mean Paul Smith. What's yours?"

"Robert Cathcart. Didn't I see you in the elevator?"

Smith's grin broadened. "Mustn't call it elevator. Teacher says it's an 'atom disintegrator'."

"If you mean the Inspector, I believe he called it a 'status-changing machine'."

Smith laughed. "I knew it was something quite impossible. Well, ain't we got fun! Are we all crazy, or what?"

"I guess 'what' is the answer," Cathcart soberly replied. "*Facilis descensus Averni.*"

"Come again?"

"That's Latin. It's from Virgil. It's the first part of a famous quotation which goes: '*Easy is the descent into hell, but to retrace one's steps, and regain the world above, this is the difficulty, this the labor.*'"

Smith whistled admiringly. "What a swell lead for a news story!"

"You aren't by any chance a reporter?"

Smith jumped guiltily. Then turned large blue eyes reproachfully at his accuser. "Why, you know perfectly well that 'the Boss' won't tolerate reporters."

JUST then they reached a pair of closed double doors surmounted by a sign reading: "DINING HALL." In front of the doors stood a group of about twenty men in black uniforms, with the red shoulder-insignia of the Colony Guards. One of these Cathcart recognized as Putorius Terro, the truck-driver who had been with him in New Jersey that very afternoon.

Terro broke away from the group and stepped over. "Hello!" he said truculently. "Where have you been all this while?"

"All this while?" Cathcart echoed. "What do you mean? I got here this

afternoon."

"What held you up? I've been here four days." He stepped close to Cathcart, and thrust some folded papers into his hand, at the same time whispering in his ear, "Shove these into your pocket, and don't look at them until you get back to your room. They'll give you the low-down about this here new universe."

He moved away through the crowd of colonists.

"Pleasant looking friend you have," Smith remarked with a grimace. "What did he whisper in your ear?"

"Now I'm sure that you're a reporter," Cathcart countered evasively, thrusting the packet of papers into his breeches pocket.

Just then a disturbance in the crowd behind them attracted their attention. One of the colonists, a dark-complexioned man in overalls, was struggling in the hands of two of the guards.

"But I tella you, I no passa da pape," he cried.

"What's your name?" snapped one of the guards.

"Tony Angelino."

"Well, Tony, who passed the paper to you?"

Angelino looked wildly around for someone on whom to put the blame.

Terro stepped up to the group. "It was him there," he announced, pointing at Cathcart. "I saw him."

"Why, you—!" Cathcart indignantly began.

"Si, si!" exclaimed Tony, delighted at finding a scapegoat. "He passa me da pape."

Cathcart wheeled about in surprise to face his second accuser.

But now Terro cried, "Search him!" And Cathcart was promptly seized and held by two of the guards. Terro reached into Cathcart's pocket, and pulled out the package of papers. "Po-

litical leaflets! Populistic propaganda!" he triumphantly shouted.

"Why, you yourself—," Cathcart began. Then something stayed his tongue. Shrugging his broad shoulders resignedly, he lamely explained to his captors, "These papers are not mine. Someone thrust them into my pocket just now. I am a chemist, not a politician."

"A likely story," sneered a Sergeant, bustling up. "Come on, men, take him to Headquarters."

Cathcart turned to Smith, who had been watching the whole performance with a broad grin on his freckled Irish face. "Come along and vouch for me."

But Smith shook his head. "Sorry," he replied, "but I never saw you until a few moments ago."

"Better pinch him, too," the swarthy rat-faced Terro suggested. "He may be one of them Populists, too."

"Okay, you take him," the Sergeant commanded Terro.

So, protesting, Smith was dragged along.

Behind them the dining-room doors were just opening to admit the hungry colonists to the supper which the two prisoners were going to miss. The prisoners were escorted through the night to the Administration Building, and down into its basement where they were thrust into a cell.

CHAPTER III

Aren't We Still on Earth?

AREN'T WE STILL ON EARTH?

AS THE guards departed after locking the two of them in their cell, Smith turned reproachfully to Cathcart with "Nice mess you've got me into!" But there was a twinkle in his blue eyes which belied his tone of voice.

"Oho!" the other replied. "You

don't seem particularly despondent. What's up?"

"Well," laughed Smith, "the truth is that I rather welcome this arrest. Maybe now I'll find out some of the things I came here to learn."

"Such as?"

"The location of Malcolm Frain's alleged colonies, and what becomes of the thousands of people who disappear into them."

"I'm on the same quest myself," Cathcart admitted, "but not for any newspaper."

"Who said anything about a newspaper?" Smith hotly retorted.

"Oh, I'll keep your secret."

"But I haven't any secret."

"All right, pal, you haven't any secret; and I have a selfish reason for not giving you away. I'm here looking for my brother, and I'd hate to have my quest interrupted by getting suspected of being a friend of a newshawk."

"Have it your own way," Smith retorted, grinning.

They lapsed into silence, Cathcart turning over in his mind the rapid succession of the events of the day, and wondering how Putorius Terro, who had left the earth only an hour or two ahead (although claiming to have arrived here four days ahead), had so speedily been made a regular member of the colony guards, and had become so soon involved in political propaganda. Why, indeed, should there be political propaganda in a utopia?

His thoughts were interrupted by the arrival of two guards, who unlocked the cell door, and commanded, "Hey, you in the black uniform, come with us."

"Good-bye," waved Smith, "Invite me to the hanging."

The two soldiers scowled at him, as they led Cathcart away, upstairs to an office on the ground floor, where a

stern-faced Inspector sat behind a desk. The two guards halted their prisoner in front of the desk.

"Name Cathcart?" snapped the official.

"Yes, Sir."

"Charged with possessing Populistic literature?"

"So I understand, but it was planted on me."

"A likely story! You were warned not to have anything to do with any investigations of the nature of this new universe, were you not?"

"So that's what those papers were about? I haven't read them yet."

"Answer my question!"

"No. No one warned me. The Inspector who lectured to us seemed quite willing to answer questions on the subject, and said nothing whatever about not pursuing the subject further."

"Well, you know the rule now. And the penalty is a year's hard labor on the roads. Who gave you the subversive literature which was found on you?"

Just then a guardsman bustled in and announced, "Important message, Sir," and then whispered something in the Inspector's ear. Cathcart caught "... message from outside ... Boss's daughter ..."

"Not so loud, you fool!"

More whispering. The Inspector's already severe face contorted into a scowl. Finally he turned to Cathcart with, "Young man, your explanation will be accepted—for the present." Then to one of the guards, "Take this fellow to Dr. Freundlich's house."

THE guard led Cathcart out into the starless tropic night, and down a brightly lighted street, past store windows and a motion picture theater, to a residence district, where he mounted the steps of a rather pretentious stone dwelling, and rang the doorbell. The

maid who answered the door gasped, glanced hurriedly from the guard to Cathcart, fell back a step, and crossed herself.

"Is the Professor in?" the guard gruffly inquired.

"Y—yes, Sir. Won't you come in?"

"Come on, fellow," said the guard, striding into the house.

In the hallway stood a bullet-headed roly-poly man with closely cropped hair and thick-lensed glasses. His smooth features displayed concern, tinged with fear.

"What—what is it, officers?" he mildly inquired.

"Only one of us is an officer," snapped the guard. "This fellow here is paroled into your custody, Professor, by order of Inspector Jenks. Name—Cathcart. That's all." He turned and stamped out of the house.

"Ah, my friend, and what is your crime?" asked the little man, solicitously.

"As far as I can make out," Cathcart replied a bit doubtfully, "I am charged with possessing seditious literature, though I swear it was planted on me. I arrived in this colony only a few hours ago, and haven't had time enough to find out what to be seditious about, even if I wanted to. May I ask if you are Herr Doktor Emanuel K. Freundlich?"

"But yes, of course. You have heard of me, no? And do the people back on the earth still remember my work on atomic physics?"

"Why not? It is scarcely two months since your thesis was published, shortly after I started working for Frain."

"Ach, no. That was five years ago. My thesis, I mean. And you, you are not by any chance the young Robert Cathcart, Ph. D. from Johns Hopkins, who was working for the Chemical Foundation at about the same time?"

"I am Robert Cathcart, and I worked for the Foundation, but not five years ago. Five years ago I was still at Harvard, and hadn't even started my post-graduate work at Johns Hopkins."

Dr. Freundlich took off his thick-lensed glasses and rubbed his watery blue eyes with a tired gesture. "Ach, it is that verdammte time—difference between your universe and ours!" he exclaimed in an exasperated tone. "What date was it when you left the earth?—But no, no," holding up one pudgy hand, "you must not answer me. It is verboten—prohibited—against the law. By the way, have you dined?"

"No," Cathcart replied, with a wry face. "They arrested me just as the dining-room doors were about to open."

The little professor beamed. "Ah, then you are just in time. Minna, O Minna! Set another place at the table. And now, my dear young friend, tell me all about your unfortunate experiences." He led his guest into a sitting room, and offered him a chair.

CATHCART began at the beginning—the disappearance of his brother.

"Ah," commented Dr. Freundlich, "as Omar says:

*'Strange, is it not? that of the myriads
who*

*Before us pass'd the door of Darkness
through,*

*Not one returns to tell us of the Road,
Which to discover we must travel too.'*

Well, let us hope that now you shall discover. Proceed."

So Cathcart continued with his story. Dr. Freundlich's kind face clouded at the account of the brutality in the elevator, or "status-changing machine," or whatever; and again at the planting of the documents on Cathcart, and his resulting arrest. But at the end of the

story, Freundlich's expression changed to an inscrutable one which Cathcart found it hard to fathom.

"Ach, it does not hold water, quite. Too quickly you are arrested, and too soon released. I fear that you are an 'agent provocateur'—that you are sent to spy upon me. But you will find that old Herr Freundlich is thoroughly loyal to the Boss—thoroughly."

"Do they suspect everyone?" Cathcart indignantly exclaimed. "This place was described to me as a utopia. Certainly the outline of your laws and living conditions which the Inspector gave us in the brief lecture this afternoon sounded absolutely idyllic. Why then should there be communism and rebellion here?"

Freundlich peered inquiringly through his thick glasses. "When God made Paradise, he put a snake there too," he reminded.

Cathcart smiled. "So you blame Malcolm Frain for this unrest?"

"No, no! I did not mean that. Please! If you are going to arrest me, do so now, before my sister enters."

"I don't know what on earth you mean. I am not a spy—merely a colonist, hoping to learn from you what this is all about."

"You'll learn nothing from me! It is verboten. Ach, too late! Here comes my sister." A placid blonde Teutonic lady of uncertain age was entering the room. "Emily, this is young Dr. Cathcart, who has been assigned by the Boss to assist me in my laboratories."

Comprehension dawned in Cathcart's face. "Why, of course!" he exclaimed.

"And what else would you be here for, my young friend?" Freundlich blandly replied. "You see, Emily, he is a bit of a dummkopf. I shall have to teach him much."

"Do not make fun of the poor young

man, Emmanuel," his sister reproved him, as they walked into the dining-room.

At the meal the conversation soon developed into a cross-examination of the younger man as to developments in atomic physics in the alleged five years since Dr. Freundlich left the earth, the Herr Doktor expressing repeated surprise at the apparent total lack of progress during that period.

After dinner, Cathcart's belongings arrived by messenger, and he was shown to the guest-room of the Freundlichs.

In the morning his host beamingly informed him that word had arrived from Headquarters withdrawing all charges, and definitely assigning Cathcart as the doctor's assistant. "So perhaps you are not an 'agent provocateur,' after all."

But, in spite of this last remark, Dr. Freundlich continued to draw the line at any discussion of the nature of this new cellular universe in which the colony was supposed to constitute one of the holes.

CATHCART'S first day at his new job was spent in getting an advance in pay, buying some civilian clothes, learning the ropes of his host's laboratory, and picking up the threads of the various problems of industrial chemistry on which his host was engaged. But all the time, under the cover of an intent interest in what the roly-poly little Prussian was telling him, Cathcart's keen grey eyes were always searching for clues—for he felt instinctively that Dr. Freundlich was holding something back from him.

And Cathcart found clews aplenty. Among the laboratory equipment which showed signs of recent use were an Atwood's machine, a simple pendulum, a magnetic compass, and a Foucault pendulum, none of which had any pos-

sible application to any problem on which Dr. Freundlich had been supposed to be working. These set Cathcart to thinking, for every one of these four items could be used to ascertain some feature of the nature of the physical universe. But, inasmuch as the Herr Doktor had refused to talk on the subject, Cathcart merely grinned to himself and held his peace for the present.

The next day—to Cathcart's great surprise—was Sunday. He had left Frain City, New Jersey, in the "status changing machine," on a Monday at 8:30 p. m.; and, after a twenty minute trip, had arrived at this colony at 4:15 p. m.—on what day of the week or month, he had not thought to ask. And now, two days later, it was Sunday!

Oh, well. Perhaps a day off would give him his long-awaited chance to resume his search for his brother. He broached the matter to his host and hostess at breakfast. "Do we have to work today?"

"No."

"Then could it be arranged somehow for me to get to Town 13, to hunt for Johnny?"

"It could be, yah," dubiously. "We could hire a Frain V-8. All cars here belong to the government, but are very cheap to hire. A most excellent arrangement. But the office in Town 13 would not be open on a Sunday. So let us work this afternoon, and then take Monday afternoon for the trip, which is but thirty miles."

"Will tomorrow be Monday?" Cathcart asked.

"And why not?" Dr. Freundlich replied. Then, catching the twinkle in Cathcart's eye, "Ah, I see that you jest. But you must not jest, my young friend. It is verboten to poke fun at anything which the Boss has ordained."

"Meaning Malcolm Frain?"

"Yes. But it is also verboten to call him anything other than 'The Boss' down here."

Miss Freundlich, a puzzled frown on her bland blonde face, interposed, "What else could day after today be than Monday?"

"Sh, Emily!" cautioned Dr. Freundlich. "Enough of this jesting. Our young friend might report us."

And, in spite of Cathcart's protestations that he was not a spy, the Freundlichs refused to discuss the matter further.

HE ATTENDED church with his hosts, devout Lutherans, and worked that afternoon and the next morning in the laboratory. Monday, right after lunch, the three of them set out in a hired car on an excellent concrete highway which wound across the level plain directly away from the high wall of white rock against which lay the capital city. Above them stretched an unbroken expanse of luminous pearly white clouds. The Herr Doktor drove.

Cathcart, sitting in the front seat beside him, stared aloft for some time; then said, "This sunless rainless sky gets me down. Doesn't it ever change?"

"Never except at night," Freundlich asserted.

Cathcart shuddered. "It gives me the creeps."

A bit further on, they came upon a detour sign and a gang of men in striped overalls, working with picks and shovels, and guarded by a squad of black-uniformed colony guards. As Freundlich was about to turn into the side road, the Corporal in charge looked up. It was Putorius Terro!

"Halt!" he shouted. Then to his squad, "Arrest that man! He's an escaped convict."

"Aber nein!" Dr. Freundlich exclaimed, as he stopped the car. His

pale eyes flashed behind his thick-lensed glasses, and his short-cropped hair seemed to brittle belligerently. "He has been paroled to me."

"Have you the parole papers with you?"

"No, but —"

"Get out of the car, all three of you."

Cathcart's face was calm, but his eyes were dangerous. "This car is rented in my name, Terro," he said in level tones. "Would they let a criminal rent a state car?" He held out the rental slip.

"Oh, I beg your pardon, Bob," Terro apologized in an oily voice. "Come over here a minute." Then he whispered, "I was only doing my duty. Have to throw a bluff, you know. Thanks for not telling who planted them papers on you the other day. I shan't forget. How did you beat the rap?"

"I guess they needed a chemist more than they needed a man for the chain gang." Cathcart glanced around, and his eye fell on a small red-headed freckle-faced grinning convict. "Oh, hello, Smith."

"Real name's Mickey Foley," the convict replied, his grin broadening. "Reporter for the New York Daily Tabloid. They caught me red-handed. But civilians mustn't talk to prisoners, must they, Corporal?"

"No, you really shouldn't Bob," Terro confirmed. "Well, see you later."

Cathcart, Dr. Freundlich, and the latter's stolid blonde sister clambered back into the car, and were on their way.

"Who is your scowling Corporal friend?" Dr. Freundlich asked.

"His name is Putorius Terro. He—"

"Ah! Putorius is the Latin word for weasel, and Terro is the proprietary name for a certain brand of poison. He will bear watching."

"He's not to blame for his name, but

it certainly fits. I knew him quite well on earth; we were truck-drivers together. And, unless he has changed a lot, he is a radical and a trouble-maker."

THEIR course finally veered to the right, and another towering wall of their cellular world loomed ahead. Against it nestled a pretty little town of about two thousand inhabitants, and several factories. Dr. Freundlich stopped the car in the public square in front of a two-story brick building, flying the red "F" in a white circle on a blue field. No stars and stripes alongside of it as on earth, for here the Boss was supreme, and acknowledged no higher power.

Cathcart's heart sped up, as he and Dr. Freundlich mounted the steps. To the Sergeant at the desk inside, the Doctor said, "My young friend here is looking for his brother, named John Cathcart."

The Sergeant shook his head. "No such person since I've been here." He lumbered to his feet, and began pawing in a card-file. "Ah, here's his record. 'John Cathcart, agricultural foreman. Height, five feet eleven. Weight —.'"

"Skip it!" Cathcart impatiently cut in. "Where is he?"

"— 160 pounds," the unperturbed Sergeant continued. "'Eyes, blue. Hair, brown'."

"Skip it!"

The Sergeant looked up annoyed. "All right. All right. Your brother was transferred here from another colony about three years ago, as head foreman of all the government farms of this district. He died two years ago. Tractor upset on him. Age 36."

"But it can't be!" Cathcart exclaimed. "Johnny was only 21 when he left the earth six months ago!"

"Does the description fit?" Dr.

Freundlich asked, with kindly concern in his watery eyes.

"Yes, except his weight. He weighed only 132, the last time I saw him."

"But in fifteen years he could —"

"What do you mean? Fifteen years?"

"You forget the time-discrepancy."

So Johnny was dead. Cathcart blinked away a tear.

Then, straightening up, he resolutely announced, "Well, here ends my quest. Now to get back to the earth."

Dr. Freundlich gazed sadly at him. "My dear young friend, there is no going back."

"How absurd!" Cathcart exclaimed. "I made very clear, when I signed up, that I wanted merely to find my brother. Surely they won't—they can't—keep me here against my will."

"The Boss can and will do whatever he pleases. He is omnipotent in this, his colony."

"Then I say, damn Boss Frain!" For a moment Cathcart clenched his fists. But gradually the look of rage in his face changed to a frightened caged expression.

With a groan he sunk upon a chair, and took his face in his hands.

CHAPTER IV

The Nature of the Universe

A HAND was laid on his crumpled shoulders, and the kind voice of Dr. Freundlich said, "Careful, son! Careful! I know how you feel. But, in your sudden grief and despair, take care to utter no treason."

But it was not the doctor's words that brought Cathcart out of his daze. Rather it was the thought of the flaming Donna Frain, and her projected visits to this colony.

Cathcart shook himself together and

stood up. "Thank you, Sir." Then looking the Sergeant squarely in the eye, "I have no cause for treason.—Where is my brother buried?"

The official directed them to the local cemetery, where they purchased a wreath of flowers and placed it on Johnny's stone. As Cathcart knelt beside the grave, and read his brother's birth-date in outer world notation, he gave up all hope that this might be some ghastly mistake—some other John Cathcart than his brother. And also all hope of ever seeing the outer world again himself.

Emily Freundlich laid a motherly hand on Cathcart's shoulder. Dr. Freundlich, shaking his head sadly, began, "For some we loved, the loveliest and the best —"

"Please don't," Cathcart begged.

As the three of them drove back together to the capital city, the little Prussian said, "My young friend, I no longer suspect you. Your grief and your horror have been too genuine. I trust you now. Let us cooperate and search for the secret key to this universe."

"Careful, Emmanuel!" his sister interposed. "This is treason."

Dr. Freundlich exploded, "Let it be treason, then! I believe we can trust Mr. Cathcart here. There may be some escape from Malcolm Frain, if we can once discover the secret of this cockeyed universe of his."

"I'm with you, Sir," Cathcart asserted. "What have you found out so far?"

"Um," Freundlich replied, pursing up his pudgy lips. "I have measured 'g,' the acceleration of gravity, with both Atwood's machine and a simple pendulum—a compound one, of course—and have obtained exactly the earth value: 32.16 feet per second per second. This would indicate that we are still on earth, in a cavern not very far below

the surface, reached by the elevator which the authorities call a 'status-changing machine'."

But Cathcart objected. "You've been here for five years, you say, Doctor. Yet the warehouse from which we both came here, hadn't been built that far back. In fact, when I was carting silt into it in a motor-truck three months ago, there was not even a hole in the ground for an elevator shaft."

"You forget the time-discrepancy."

"Damn the time-discrepancy! And yet —. Hold on a minute. According to my reckoning, you were on earth two months ago; according to yours, you've been here five years. Terro preceded me here by only three hours and yet said that he had been here four days. My brother" — his voice caught — "grew fifteen years older in six months. I wonder if, after all, there may not be some fixed ratio, thirty to one, between our time and that of the real world."

"A mere coincidence, I'm afraid," said Freundlich, shaking his bullet head, "and I doubt if we are on the earth anyway, in spite of 'g'; for the magnetic compass indicates no north, and the plane of my Foucault pendulum shifts imperceptibly, instead of making one complete rotation each 24 hours as it ought to."*

"Just what is the rate of shift which you have observed here?"

"About half a degree an hour."

"There!" Cathcart exclaimed triumphantly. "That's the same thirty-

* The Foucault pendulum was invented by Jean Bernard Leon Foucault, a French physicist in 1851. By means of this instrument, he demonstrated the rotation of the earth on its axis by the diurnal rotation plane of oscillation of a long pendulum with a heavy weight. The following year he invented the gyroscope. He was one of the most brilliant of French physicists, and was first to prove that light travels slower in water than in air. He also invented the polarizing prism and discovered a means of giving the mirrors of reflecting telescopes the form of a spheroid or paraboloid of revolution.—Ed.

to-one ratio between our time and earth time. The failure of the compass can perhaps be explained by iron deposits in the walls of this cavern. I believe that we're on the earth, with merely our time sped up in some manner."

But again Dr. Freundlich shook his round head. "If that were so," said he, "then 'g' would appear to have only one one-thousandth of the earth value, instead of *exactly* the earth value. Things when dropped would merely float down to the ground, instead of falling. A man could unbelievably jump a billion times as high as he can now. No, my young friend, we bark up the wrong tree, I'm afraid."

"And I'm afraid," his blonde sister cut in from the back seat, "that we'll all end up in jail if you two men don't stop discussing verboten matters!"

DURING the weeks that followed, they resumed the discussion from time to time. And, whenever they were sure not to be interrupted by anyone who knew enough physics to suspect them, they repeated and verified their experiments. Their regular—and supposedly only—work consisted mostly of dye-stuffs and military explosives. Why the military explosives, Cathcart often wondered? But, high though Dr. Freundlich stood in the councils of the Frain Industries, the doctor could not enlighten him.

Several months after his arrival, Cathcart suffered two annoyances. The first was to see the insufferable Putorius Terro, now promoted to Sergeant, escorting the flaming Donna Frain on the streets of the capital city. When Cathcart had stepped forward eagerly to greet her, he had imagined that for a moment her eyes too lit up. But swiftly they had become cold green and inscrutable, and she had snapped, "Cathcart, have a care! Civilian colon-

ists do not speak to Inspectors unless spoken to."

Then she had passed on with head held high, and Sergeant Terro had grinned back possessively and tauntingly over his shoulder.

And that same day Cathcart had received a notice to don his uniform and report for military duty. Dr. Freundlich explained that every able-bodied male was liable to one week's duty as a soldier, out of every month.

"What I can't see," Cathcart exploded, "is why Malcolm Frain—I mean 'the Boss'—has to have all this army. It's many times more than enough to keep order here, and certainly there's no danger of any attack on this colony. Though I suppose the Boss *does* have a purpose in everything he does."

"It is not for us to question his purposes, my young friend," Freundlich sententiously replied. Then, glancing shrewdly at Cathcart, he added, "But I think that the real cause of your annoyance is not the military establishment of the Boss, but rather the military establishment of Boss's daughter. I've noted young Weasel Ant-poison about town here, and he seems to be a devil with the ladies."

Cathcart flushed. Then the color gradually drained from his cheeks, and his broad shoulders slumped.

Freundlich stepped over to his shelves of chemicals, took down a large glass jug and poured out a tumblerful of ruby colored liquids. "Here, drink this. It will make you feel better."

"What is it?"

"Wine."

"But I thought that liquor was forbidden by the Boss."

"It is. But one of the advantages of being a chemist is that I can make wine synthetically. Terro has irked you. 'Oh, many a Cup of this forbidden Wine

must drown the memory of that insolence! as old Omar used to say."

Cathcart took the glass, and drained it.

Freundlich continued, "Now go to your drill; and, when you see Terro, face him with a smile. Meanwhile I'll putter around here, and complete our gyro-compass. If there's any north in this cellular world, a gyro-compass, being immune to iron deposits, ought to show it."

Cathcart put on the black uniform which he had worn as a truck-driver on earth, and reported at the headquarters building, where the red shoulder-insignia of the Colony Guards were sewed on, and he was put in a company of about a hundred green recruits, who were then marched to barracks in a nearby village.

THE first six days of the week were spent in drilling, rifle and revolver shooting, and instruction in military courtesies. But on the seventh day (the extra day of the eight day week, known as Frainday) they were given actual work to do, guarding road gangs. And among Cathcart's prisoners was Mickey Foley, alias Paul Smith, the tabloid reporter from New York.

"Well, well," exclaimed Foley, beaming, as he saw who had been placed over him. "If it isn't the criminal syndicalist! And to think that if it hadn't been for your good luck and my poor luck, I might be guarding you, as Damon Runyan said in 'Pilgrim's Progress.' Mind if I ask you a question?"

Cathcart grinned back. "If it isn't for newspaper purposes, nor treasonable."

"How would I be sending a story to my paper from here? I ask you!"

"Then it *is* treasonable?"

"Sure it's treasonable! How much does the surface of the earth curve?"

"About eight inches to a mile. But I can't see that there's anything treasonable about that."

"Well, stop me if you've heard this one. I've been helping the surveyors run levels for this road, and this world is practically flat. Wouldn't that make a hit with Bryan!"

"Bryan is dead."

"Well, so'll you be, if you're caught talking science with a newspaper man. But, all joking aside, I think there's a story in this, somehow."

"I wouldn't be surprised," Cathcart admitted, his gray eyes narrowing thoughtfully.

That evening, his tour of duty over, he reported this information to Dr. Freundlich, and the Herr Doktor reported in return that his gyro-compass had indicated as north the same direction as in the warehouse from which they had entered this cellular world, and also that the Foucault pendulum rotated at a rate of exactly $11^{\circ} 15'$ per day.

But the importance of these scientific developments was completely overshadowed by the political news of the past week. The object of the visit of Inspector Donna Frain to this colony, as the direct representative of her father, had become known. The circulating of leaflets criticizing the Boss had reached sudden and unexpected new heights, discontent was seething, and the flaming Donna had come to take personal charge of the espionage work of the dread Frain Secret Service. Her constant military escort was Sergeant Terro.

"I don't think that he's enough protection for her!" Cathcart declared.

"Meaning that you'd like to go along too?" asked Dr. Freundlich, smiling shrewdly.

"No. I don't butt in where I'm not wanted. But all the same, the Boss's

daughter ought to be guarded by a full squad of dependable men."

"To chaperone the Weasel?"

Cathcart made a wry face. "Maybe that's what I do mean, after all," he admitted. "So let's skip it."

"No," Freundlich objected. "I think that you are really sincere in your desire to protect the Boss's daughter. The Inspector in Charge here has tried to prevail on her to accept additional guards, but she has refused. They can't even give *secret* protection to her, for she herself commands the Secret Service. So I suggest that you trail the two of them, not to spy upon your enemy, but rather to protect your friend. You have my permission to leave your laboratory-work, for that purpose."

THE next day was Sunday. Donna Frain, accompanied by the inevitable Terro, attended Episcopal services; and Robert Cathcart, with the full approval of the Freundlichs, also went to the Episcopal Cathedral, instead of to the Lutheran church with his host and hostess.

After the service, Donna and her escort set out on foot for the city limits, and Cathcart trailed them. The couple entered a dense thicket of five-year-old pines and hardwood along the sheer face of the barrier cliff, and Cathcart continued to follow them. They seemed to be rather aimlessly following a winding trail, rather than to be bound for any particular destination.

Finally the path widened out into a little clearing, carpeted with soft club moss. Donna and the Sergeant sat down together on the moss. Cathcart hid behind a bush at the edge of the wood, and peered out.

He was rapidly becoming more and more ashamed of his role of spy, as he gradually admitted to himself that,

after all, his major interest was to protect Donna Frain from Putorius Terro, rather than from the enemies of the realm.

But thus far Terro did not appear to be acting in any way inconsistent with his apparent position as bodyguard and servitor to the daughter of the Boss. Only the burning light in Terro's eyes, as they devoured the lovely Donna, belied his apparent subordinate position. Cathcart turned his head away, to blot out the unwelcome sight.

Suddenly Donna screamed!

Cathcart leaped to his feet, and dashed out into the clearing.

From the woods on the opposite side, straight toward Donna and Terro, there was rushing a fearsome many-legged silver-colored jointed beast, about forty feet in length and five feet high. Its motion was a cross between a gallop and a wriggle, as it covered the ground with prodigious speed.

Donna and Terro were both now on their feet, Terro adding his frightened yell to Donna's shrieks, as he crashed blindly into her in his frantic rush for safety.

Terro's blind rush pushed Donna out of the path of the charging monstrosity. Both he and she stumbled and fell headlong into the soft moss. The beast kept on. And, unarmed though Cathcart was, he ran to meet it.

But it never reached him. Suddenly it halted, shuddered, and settled heavily to the ground, as though machinery within it had run down. Cathcart's rush carried him on, to bump against the huge inert remains. It felt soft and crinkly, like tinsel over papier-maché. His hands and the front of his suit, where he had touched the creature, were covered with silver dust, as if from poorly applied aluminum paint. Could it be that this beast, which a moment before had seemed to be a menacing

monstrosity, was nothing more than a mere carnival creation impelled by machinery? But no; it had been too real for that.

These thoughts flashed through Cathcart's mind in an instant; his real concern was for Donna Frain. Turning quickly, he picked her up from where she had fallen. "Are you all right?" he asked.

Still quivering, she clung to him. A fierce joy surged through him, as he held her close. She looked up into his eyes for a brief instant, and seemed content.

"Hi, there!" shouted Terro, scrambling to his feet.

Cathcart released the girl, flushed guiltily, and clenched his fists.

BUT DONNA had regained her poise.

With gratitude shining in her green eyes—warm green now, rather than their usual jade inscrutability, she exclaimed, "You two men have saved my life! You, Sergeant Terro, pushed me out of the path of the charging monster just in time; and you, Private Cathcart, killed the monster. This will go well on the records of both of you."

Cathcart's eyes flashed, as he opened his mouth to protest that Terro had run like a coward and had merely accidentally stumbled against Donna in his mad flight. But, before the words came out, he clamped his jaws together again, grinned irritatingly, and held up his right arm in salute.

"A pleasure to be of service, Inspector," he said.

Putorius Terro was not so tactful. "Cathcart didn't even touch the beast," he blurted out.

"No?" asked Cathcart, amusement glinting in his gray eyes, as he spread his arms wide, disclosing the silver powder meared all over the front of him. Then, with a sudden contempt for let-

ting himself be put in the same class as his impostor rival, "The Sergeant speaks the truth. I admit to a foolhardy attempt to kill the monster with my bare hands, but apparently the dying was the monster's own idea."

Donna imperiously shook her flaming head. "You are too modest, Private Cathcart," she declared. "I saw what I saw. But now we have a problem on our hands. I must pledge you two men to secrecy, for—for—for it would never do for the colonists to know that this utopia has harbored a nightmare creature like this. Cathcart, stay here in this clearing and see that no one comes near the body. You, Sergeant, —"

"But, Inspector," Terro interrupted, "I tell you —. Well, anyway, what was Cathcart doing trailing us? Ask him that."

"I will attend to *that* question later! But, as I was saying —."

"You might just as well hear the answer now," Cathcart cut in. "I was trailing you because I feared that there might be Populists in this wood, and I felt that the daughter of the Boss was entitled to more of a body-guard than just one Sergeant."

"Why you —!" Terro began.

"Silence!" Donna snapped. "Sergeant, come with me. You will guard the entrance to the wood, while I go to get additional troops, to throw a cordon around the place. Also for a truck, to remove the carcass."

She and Terro started off down the trail together toward town. Cathcart grinned after them, and Terro flashed back at him a black look which gradually merged into one of triumph.

Cathcart shrugged his broad shoulders; then turned his attention to the dead silver-colored monster. Where had he seen something like this before? In carnivals? At the Mardi Gras? No.

That was not it. Some obscure thought clamored for entrance at the threshold of his mind.

He walked around the carcass, kicking it once or twice. Silver dust powdered his shoe. He noted a light silver trail on the moss and grass, leading back the way the beast had come.

SNAPPING his fingers with sudden resolution, he dog-trotted down this back trail. A few hundred yards led him to the barrier wall of this pocket in solid space, which housed the colony. The wall towered above him, gray-white and flat and sheer, clear to the clouds, and at its foot flanked with bushes and climbing vines. Into a thicket led the silver trail; and, as Cathcart parted the shrubbery with his hands, he saw that the cliff-face beyond was riven—a jagged crack some twenty feet high, and five or six feet wide at the base. This then was the lair from which the silver beast had emerged.

On inspecting this opening more carefully, Cathcart saw that its faint pencilled line extended up the barrier until lost to view in the mists above. At its base it had forked, and the triangular piece of rock formed by the fork had been forced out and was lying in the bushes to one side.

Cathcart peered into the dark and cavernous hole. Did its blackness hide other silver beasts? Well, he must take the chance. For if, as he had been told by the lecturer on his first day in this colony, it was true that this new world was a part of a cellular universe, might not this cave lead to another cell? Perhaps he, Robert Cathcart, might discover new worlds for Malcolm Frain to conquer, and thus gain credit—perhaps even freedom from his imprisonment! At least, he might possibly learn something of interest and assistance to the scientific speculations of

himself and Dr. Freundlich. So, taking a paper of matches from his pocket, he lit one, and groped his way in.

The rock underfoot was jagged and rough, with many projections man-high—stalagmites, it seemed. He had progressed only about a hundred yards when half his matches gave out; so he retraced his steps. Then ran back through the woods to the clearing, lest Donna Frain return in time to discover that he had been exploring.

Just in time, too, for a few minutes later Putorius Terro emerged from the woods on the side toward the town.

"Where's the boss?" Cathcart innocently asked, but his gray eyes held hidden amusement.

"You mean the Boss's daughter."

"Have it your own way," Cathcart shrugged.

"She's bringing a truck. I have posted troops around the wood. No one but us three is to come in here, or know of this. And now, Cathcart, before she gets here, I want to tell you a thing or two. Lay off of Donna Frain and me. If you poke your grinning face into my affairs again, I'll frame you and get you put onto road-work, or perhaps something worse. I have considerable influence with the Administration —"

"So I see."

"— and in other quarters," Terro added meaningfully. "So watch out."

"Terro, I don't altogether trust your loyalty to the Boss, and —. Sh! Here comes Inspector Donna."

A large auto-truck crashed its way into the clearing. Donna clambered out of the driver's seat, and directed the two men to take axes, shovels and tarpaulins out of the back, chop up the carcass, load the pieces aboard, and cover the mess with tarpaulins.

The pieces were singularly light and pithy, but were real insect flesh.

Watching his opportunity, Cathcart found a large electric flashlight in a pocket of one of the doors of the truck, and unseen dropped it into the tall grass.

When the entire mess had been loaded aboard, Donna turned the truck around and drove it out of the woods, followed by Terro and Cathcart on foot.

"Remember what I warned you," said Terro in a low voice.

"The same goes for you." Cathcart replied.

Upon reaching the open fields beyond the woods, Donna ordered Sergeant Terro to gather up the guards, while she herself set out alone for Headquarters with the truck.

"Mind you, both of you, not a word of this episode to anyone!" was her parting admonition.

CATHCART found himself alone.

Now was his chance! Rushing back into the wood, he retrieved the flashlight from the tall grass, and hurried to the crack in the barrier cliff.

When well inside the cavern, he rayed his light around him. Far above him towered the crack, which widened out considerably within the face of the wall.

Slowly and painfully he picked his way inward. The floor became more and more rough, the cavern wider and wider, although not too wide for the beam of his lamp to reach both sides.

At last, after about a mile of clambering around and over stalagmites, a billowy black curtain blocked the entire passage.

There was something unreal, unsubstantial, intangible about that curtain! The ray of Cathcart's electric torch, when played upon it, stopped abruptly, but neither penetrated nor illumined it. He slowly approached it, and reached

out his hand to touch it. His hand passed through it, into it, without feeling it. It was a black mist, light-absorbing! Cathcart recoiled.

But, though impervious to light, the black mist was not impervious to sound. From beyond it Cathcart could hear a slow, almost musical, deep rumble, which rose and fell in uneven waves.

As he stood irresolute in the face of this new phenomenon, he noticed a slightly red tinge to the beam of his electric flash—the batteries had begun to fail. Turning panic-stricken, he ran stumbling back along the way that he had come.

Paler and redder grew the glow of his lamp. He switched it off, and staggered a few steps in jet black darkness. Then hurriedly switched it on again, lest he get turned around.

For seeming hours this continued, until the dull red glow became practically useless. A long wait was indicated, in the forlorn hope that the battery might pick up again. But in his next short grope-ahead, he crashed full into a pillar of stone, and the electric torch was dashed from his grasp.

On hands and knees he felt about for it; and, just as he was despairing, found it again. But, when he pressed the button, no light came. He ran his fingers all over it—the lens was gone, and the bulb smashed.

With a wild moan he sprang to his feet. Then halted.

"You fool!" he cried aloud. "No panic now!"

But which way was out? While groping for the torch, he had lost all sense of direction!

CHAPTER V

The World of the Giants

LOST! Without a light, in the jet black darkness of the caverns of

the silver beast! Without even an idea of which direction was out!

Cathcart sat heavily down on a rounded stalagmite, felt of his pulse, and forced himself to wait, to sit motionless, until his panic ebbed, and the beat of his racing heart became normal. He must think! Think calmly! There should be some means—

From far far off came the hollow reverberating sound of a distant factory whistle—the five o'clock closing whistle of one of Malcom Frain's industries.

Instantly Cathcart was on his feet again, stumbling, groping, at right angles to the source of the sound. Before it wholly died away he had reached the wall of the cave, and had turned and started to edge along the wall toward the sound.

The wall was jagged. Often huge stalagmites blocked his way, causing him to detour from the precious guiding wall. But always, after avoiding such an obstacle, he managed to find his way—half panicked—back to the wall again, and grope on.

And then finally dim daylight ahead! Gradually the light grew brighter as Cathcart's progress became more and more rapid, until suddenly the light paled and vanished, and jet blackness reigned once more.

Six o'clock!

Cathcart groped his way to the side of the cave again. But could he be sure that he had not become turned around? To his sense of direction it seemed certain that he had, that he was now headed back toward the interior of the cave. Every instinct counseled him to reverse; but he mastered his instinct, and kept on.

And then, just as he was about to falter, irresolute, a branch snapped in his face. He was in bushes. He was out of the cavern!

He found the clearing, stumbled

across it, and groped about the woods on the further side, until his feet felt the trail.

A few minutes later he was in the open again, starless sky overhead, but with the twinkling lights of isolated farmhouses all about him, and far ahead a glow in the sky which indicated the headquarters city of the colony.

He reached the city, and at last the house of Herr Doktor Freundlich, without further event.

The genial Freundlich and his blonde sister had been worried for Cathcart, and received him with joy and relief.

"Lost in the woods," was all that Cathcart would say at first, but after he had eaten, and Emily Freundlich and the fluttery maid, Minna, had withdrawn, he told Dr. Freundlich what had happened.

THE two men were seated together in the privacy of the study.

"Ach, I cannot understand it," muttered Freundlich. "It is a door to which I find no key."

But Cathcart's attention had suddenly been attracted elsewhere. "Look, Doktor!" he exclaimed, his eyes riveted upon a little bug, half an inch long, scuttling across one corner of the desk; a tiny jointed insect with many legs, its body silver-colored.

"A silver-fish. So?" Then abruptly something gleamed in the pale eyes of Freundlich's round face. "Ach, yah! A silver-fish! The beast of the cave! The same! But why should Malcom Frain breed a silver-fish one thousand times its natural size?"

"Dr. Freundlich," said Cathcart levelly. "That cave is not an accidental rift. It was planned. Beyond the intangible black curtain at its further end there lies something which may give us a clue to all this mystery. No wonder Donna Frain wanted the monster dis-

posed of in secrecy. She was afraid that its accidental escape from whatever lies beyond that cave might give away the whole nature of her father's universe!" He jumped to his feet.

"My young friend," Freundlich replied, his pale eyes glowing. "We must go at once to that cave, with adequate lights, and explore it together. And we must take with us a phonograph to record those sounds which you heard."

Cathcart sat heavily down again. "I could not find that wood in the dark."

Freundlich shrugged his fat little shoulders. "And I too must wait for morning. We cannot obtain a recording phonograph at this hour of night."

Cathcart went to bed early, thoroughly tired out by his day's adventures.

Early next morning at the Frain laboratories, he and Dr. Freundlich requisitioned a phonograph—an ordinary one, inasmuch as there was none in the colony adapted to recording. But it was an easy matter for the two friends to modify a spare sound-box into one which would record rather than reproduce, and to fashion and groove some disks of soft wax. By working with feverish haste, they were able to complete their work before noon.

"And now," Freundlich announced, relaxing, "how about knocking off for the rest of the day and having a picnic? We can hire a government car."

"What!" Cathcart exclaimed. "Waste valuable time picnicking?"

"Well," said Freundlich, shrugging and beaming. "I rather thought that a certain clearing in a certain wood would be an ideal spot for lunch."

"A little cave-mouth hidden by the bough,

A phonograph, some unscored disks,
and thou

Beside me listening to the rumbling—"

"Okeh. I catch on. But how will the authorities like our quitting work without permission?"

Freundlich replied, "I am sufficiently high in the organization, so that my time is my own."

Hiding the phonograph in the bottom of a large hamper of lunch, they set out in a Frain V-8 for the wood of the silver beast.

THEY were just unpacking their lunch in the clearing when down the trail came Sergeant Terro and a squad of soldiers.

"Aha!" Terro exclaimed, his black eyebrows lifting. "So it's you, Private Cathcart? I saw an auto headed in here, and hurried over to investigate. You're not, by any chance—?"

"Why, Sergeant!" Dr. Freundlich interrupted, looking up with an expression of complete innocence on his pudgy face. "This wood is not verboten, it it? Dr. Cathcart told me—"

"Cathcart!" Terro snapped. "You—"

Cathcart rushed over and seized the Sergeant by the arm. "Easy there!" he whispered. "Be careful what you say. Dr. Freundlich knows nothing—doesn't even suspect anything. He asked me where I was yesterday, so I brought him here just to *keep* him from suspecting." Then raising his voice, ostensibly for the purpose of letting Freundlich hear, "Get away with you and leave us alone, or I'll put in a complaint to the Boss. This wood is not posted."

Terro winked, and a grin spread over his swarthy face. "I get you, pal," he said, as he withdrew with his troops.

Cathcart returned to his companion. "Weasel-Face trusts me as far as you can throw a bull by the tail," he reported, "which is considerably further than I trust him. He'll stick around, out of sight. We'll merely picnic."

So they merely picnicked. After eating, they dug a hole and buried the papers and refuse. And with it they buried their recording apparatus. Then they returned to the city in their car.

At the laboratory that afternoon they found a black-uniformed Inspector awaiting them, restlessly pacing up and down.

"Where have you been?" the man snapped. "There is immediate need of you. One of the prisoners who has been running road-levels near here has escaped. Of course, we'll catch him and punish him, for no one can flout the Boss with impunity. But in the meantime this particular road-gang is being held up. The foreman suggested that perhaps one of you scientists might possibly be practical enough to be able to run a surveyor's level. Can you?"

"Why, certainly," Freundlich replied with surprising alacrity. "We both can. We'll be glad to."

"Only one is needed," the Inspector snapped.

"Ah, my friend," Freundlich apologized. "We scientists would operate the instrument slightly differently from a civil engineer—would take notes in our own way—although the final results would be intelligible to your surveyors. So I am very much afraid, Sir, that you will have to put up with the *two* of us."

"All right! All right! Come along."

Dr. Freundlich turned to his assistant, and screwed up that side of his face furthest from the official into a laborious wink. Cathcart shook his head in perplexity.

A government car was waiting outside. Dr. Freundlich sat with the driver; Cathcart with the Inspector in the rear seat.

Apparently just to make conversation, Cathcart asked, "You say one of the road gang escaped?"

"Yes."

"Are such escapes frequent?"

"Altogether too much so, recently."

"But of course you'll catch them all eventually?"

"Certainly. Where could they go? They can't get out of the colony."

Cathcart laughed good-humoredly. "Of course not. And why should anyone want to leave? I like it here. Oh, by the way, who was the level-operator who escaped?"

"Fellow named Foley."

"Um."

The Inspector faced Cathcart, and eyed him sharply. "Know the fellow?" he snapped.

"Oh, yes," Cathcart replied airily. "He came down here in the same batch with me. Newspaper reporter, I believe. I never knew him on earth." But to himself he addeed, "I wonder what Micky is up to. Something hair-brained, I'll bet."

THE road gang where they were to work was not far from the headquarters city. As Dr. Freundlich was introduced to the foreman and took over the leveling instrument, he said in a somewhat apologetic tone, "Mind if I and my young friend do a bit of practicing and checking before we start on the regular work? We are laboratory men, not surveyors, you know."

The foreman nodded his assent, and Freundlich and Cathcart took the instrument off onto a side road.

"Fortunately, it's a Y-level, rather than a dumpy, and thus quicker to adjust," Dr. Freundlich announced to his colleague. "We've got to work fast."

"At what?"

"I'm going to find out definitely whether this world is flat or curved."

He set up the machine, took a few sights through it, and completed his adjustment. Then sent Cathcart far down the road with the rod. For half an hour

they sighted, changed position, sighted, and computed.

Then Dr. Freundlich perplexedly announced, "Your young newspaper friend Mickey Foley had the right hunch. This earth is absolutely flat—that is to say insofar as anything short of absolute laboratory precision can measure it. And how can anyone expect us to get laboratory precision with a Y-level on a country road?"

"No one does expect you even to try, Doctor," Cathcart laughed. "In fact, if anyone suspected you of trying, you'd be tried yourself—for treason to Malcolm Frain."

The rest of the afternoon, until the closing whistle, they devoted to legitimate road surveying. But that evening, under cover of darkness, they sneaked out to the wood where they had picnicked that noon. With them they carried two flashlights, plenty of spare batteries, and two empty briefcases. They went on foot, rather than by car, so as to avoid detection.

Arriving at the clearing without event, they dug up their recording phonograph and blank records, and carried them into the cave.

"I hope this gets us somewhere," Cathcart doubtfully remarked.

"It may be the clue, as old Omar says, 'Could you but find it—to the Treasure-house, and peradventure to the Master too.'"

"Meaning Boss Frain?"

"Yes, though I rather suspect that you had rather it led to Boss Frain's daughter. Eh, my young friend?"

"Donna means nothing to me," Cathcart muttered embarrassedly.

"Ah! So you call her 'Donna', eh? Well, as you would say, let's skip it. Come."

CATHCART was surprised to find how much more quickly he trav-

ersed the one-mile path amid the towering stalagmites this time than the time before. Soon they stood before the wavering curtain of impenetrable darkness at the inner end of the cave.

Dr. Freundlich gingerly approached first one side of the black mist and then the other, and each time ran his hands around the edge into the darkness. "A flat barrier wall, as at our end of the cave. Another pocket in space, like our colony. But this darkness puzzles me—doubtless some gas impenetrable to our octave of light."

He took from his pocket several vacuum bottles, held them through the wavering veil, removed the stopples and let them fill, then examined them by the light of his torch—their contents proved impervious to its light. "Um!" he remarked, replacing them in his pocket.

Far out above them came the mysterious rhythmic booming which Cathcart had heard before. They assembled their phonograph and recorded all their records. Then repacked their apparatus, and thoughtfully threaded their way back through the cave.

"You know, Cathcart," ruminated Dr. Freundlich, "I've been thinking. Did you ever notice the electric lights used in this colony? These flashlights for example."

"No, not particularly. Why?"

"Neither did I particularly, either," Freundlich enigmatically replied. "But I'm going to, as soon as I get home. For I've an idea." But not a word more would he say on the subject.

On emerging from the cave, they buried the phonograph, and carried the records back with them in their two briefcases. But, instead of going home, they went directly to the laboratories. Dr. Freundlich often worked there late at night without being questioned; and tonight, if questioned, he would have



Cathcart and Freundlich plunged into the cavern's weird gloom

an added excuse—the interruption caused by the afternoon's surveying.

First he set about to analyze the gas from one of the electric bulbs, and discovered it to be an obscure mixture, theoretically impervious to any light except extreme ultra-violet several octaves above normal. "And yet it permits the passage of the light which we see. Um. Now I begin to wonder about the photographic plates which are used down here. I know that the emulsion is one of the Boss's secrets. Photographic plates and electric bulbs are both made in the Frain Optical Works, over at the other end of the colony. The factory is guarded with great secrecy, and even I, a Frain scientist, have never been permitted to enter it. Tomorrow I shall make me some photographic plates of my own."

"What have you in mind, Sir?"

"Some old Roman philosopher once said, 'Never disclose your plans until after they have been carried out.'"

"What! Quoting someone other than Omar?"

"Now you run along and get some sleep. Tomorrow you can analyze these samples which I took of the veil of darkness."

Most of the next day in the laboratories the two men worked in silence and at separate benches.

Finally Cathcart announced, "This black stuff seems to react as ordinary air. Nothing else in it. I can't understand."

"Maybe we shall know tonight," Freundlich enigmatically replied.

That evening they again set out for the cave, with more blank records and Dr. Freundlich's camera; and, while Cathcart recorded the mysterious rumbling sounds, the doctor snapped plate after plate at the pulsating black void.

On their return to town, Freundlich insisted on their going to bed; but the next morning when they reached the laboratory he confessed to Cathcart that he himself had spent the balance of the night developing his plates. "And look what they show!" he exclaimed with suppressed excitement.

(To Be Concluded Next Month)

What do the films reveal? What mysterious sounds will Cathcart and Freundlich hear when the records are played? What is the secret of the Hidden Universe? What staggering danger faces them in the second and concluding installment of this dramatic serial? Don't fail to read it, in the December issue of *Amazing Stories*.

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RIDDLES OF SCIENCE

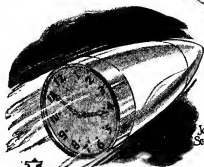
Time! What Is It?



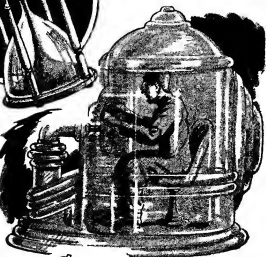
IS TIME A DIMENSION?
ANY OBJECT, TO EXIST, MUST HAVE LENGTH, BREADTH, WIDTH AND DURATION. WITHOUT THE LAST THE FIRST THREE SEEM IMPOSSIBLE . .



IS IT A CONCEPTION?
IS IT AN ARTIFICIAL, NON EXISTANT, UNREAL MEANS OF MEASUREMENT, DETERMINED BY THE MOTIONS OF A FEW RELATED AND GEARED WHEELS?



IS IT MOTION? A CLOCK, MOUNTED ON A PROJECTILE WOULD SEEM TO MOVE SLOWER. THE GREATER ITS SPEED, AT THE SPEED OF LIGHT, ITS HANDS WOULD REMAIN IN ONE PLACE,



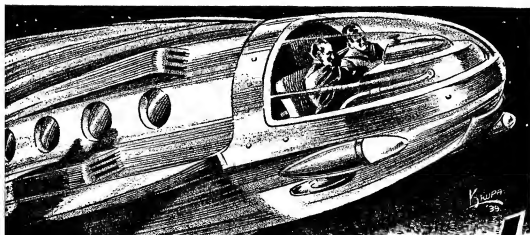
CAN WE TRAVEL IN TIME? IF A DIMENSION, A CONCEPTION, A MOTION, IT SEEMS LOGICAL, OR ARE ALL OUR PRESENT CONCEPTIONS OF TIME IN ERROR? **WHAT IS TIME?**

THE mystery of time has always been a baffling problem to philosophers and scientists alike. Einstein, in his theory of relativity, pointed out that it does not actually exist, except as a mechanical artificiality, depending on motion. But in his other theories, he gives to it the qualities of a dimension related to the three dimensions of tri-space. Duration is as necessary as width, length, and height in the existence of any object. Perhaps fiction writer H. G. Wells poses the question most aptly in his "Time Machine" when he says: "Can an instantaneous cube exist?" Time is a riddle we may never solve.

"EBBTIDE" Jones and Stan Kendrick decided on a career of peaceful beachcombers of space. But instead they became involved in a weird plot of intrigue against the exiled ruler of Zandonia.

Desperately Stan Kendrick launched his body upward in an attempt to intercept the fleeing space ship





Whirlpool in Space

By MILES SHELTON

CHAPTER I

Lost: A Space Flivver

THE space liner zoomed off on schedule. Rocket blasts echoed over the reefs, sent a shiver to the dome of the lighthouse, shook Stan Kendrick out of his deep study. He sprang to a window to see a line of white smoke disappear into the morning sky.

"There she goes!" yelled "Ebbtide" Jones from his rocky perch near the water's edge.

Stan glanced down at his beachcomber friend with scorn. "Who cares?"

"I ain't talkin' about the gal," the lackadaisical Ebbtide whined, still gaz-

ing at the sky. "I know you don't give a hang about her, specially since she told you you was mosed over. I'm speakin' about the ship."

"She was a fool to sign up for that space hostess job," Stan muttered.

"I still say she's darned good lookin'," Ebbtide shouted. "She'd make an awful perty wreck." A dubious look from Stan made him quickly add, "I'm talkin' about the ship. All I know about the gal's what you've told me. I've never saw her."

"You probably never will," Stan retorted. "Space navigation's too perilous. Needlessly so!" He heard Ebbtide cackle, barked at him, "What's

funny down there?"

"You."

"Why?"

"Cause you know enough about rock-etin' to outfly the best of 'em, and yet you stay anchored to your ivory tower with your books and telescopes and weather maps." Ebb cackled again.

"What's funny about that?" Stan demanded.

"Maybe the gal's right, you're mosed over. If you ever once got bit by a spunk fish, you'd tear out and show the space friends how it's done. I'll bet you'd make whipped cream out of the Milky Way."

"Spunk fish!" Stan grunted. "Listen who's talking! Ebb Jones, who never did a thing in his life but sit on a rock and wait for wreckage to blow in. It'd take more than spunk to ever get *you* on a space ship. It'd take twenty stevedores and a hoist!"

SURPRISINGLY, two weeks later Stan Kendrick and Ebttide Jones took off in a space flivver. No one knew where they went or why. Everyone who knew either of them was amazed. Telecasts and newspapers broadcast the story and the world talked about it. In time the story took a tragic turn.

"NO WORD FROM MYSTERY FLIERS."

Days, weeks passed. Not a hint of them from incoming space liners. Radiograms from Venus, Mars, and more distant spheres brought no word.

The native fishermen and beach combers shook their bewildered heads. "Tain't natural," they said. "Watchin' the sea was in Ebb's blood. Wherever he's gone, he'll starve for lack of it. Though most likely he's dead by now."

The excited talk at space ports and in scientific circles gradually waned. Stan's former astronomy professor concluded the young scientist must have

gone on a fatal wild goose chase. "He doubtless set out to find proof for one of his original theories, which he concocted by dozens while working at his father's lighthouse, but I fear he was too cocksure for his own good. I predict he'll never return."

At length observers came to the tragic verdict, "Lost in Space," and that was that. Most of the world forgot the incident at once.

But there was a girl who remembered, Susette Udell, a hostess on a space liner. Also a pilot named Kiger. However, neither of these ever shared their private suspicions with anyone.

In the meantime the world turned its attention to the most exciting news of the moment, the overthrow of the African king, Ajo Baustobub, Ruler of Zandonia. The European Powers sliced his kingdom over a conference table, and invited him to flee. He packed his treasure and flew to the United States.

Shortly after his arrival he rebuked the European Powers with a startling decision. Telecasts flashed, newspapers blazed with bold headlines.

"ZANDONIAN MONARCH MAY QUIT EARTH."

"KING AJO BOOKS PASSGE TO VENUS."

It was the first time in history that an ousted monarch broke off relations with the earth.

"ZANDONIAN GEMS TO GO WITH AJO."

The king's treasure was a matter of much comment, for it included the well known Zandonian Gems, one of the rarest collections of precious stones in the world. Protests sounded throughout Europe against Ajo's taking these valuables off the planet; but the United States insisted it was his right, and even offered to send official protection, which the king politely refused. He had his own cortege of Zandonian guardsmen

which would be quite enough.

The space liner he chartered was manned by a crew with an exceptional reputation for avoiding interplanetary pirates. Commanded by a pilot named Kiger. King Ajo interviewed Kiger and his crew, inspected the ship, and expressed his confidence that the trip would be successful. After meeting the new space hostess, a beautiful girl named Susette Udell, he added that he anticipated a pleasant voyage.

CHAPTER II

Bonanza in the Sky

WHEN Stan and Ebbside took off from the earth they knew exactly where they were going and had good reason for telling no one. Ebbside was so excited—and so airsick—he couldn't eat.

"We're ninety-eight hours out," said the young scientist, watching the dials eagerly. Soon he would either prove or disprove his hunch. "We're starting on our fifth day."

"Fifth day! Then why haven't we had five sunrises?" Ebbside had never been off the earth before. "We ain't had but one, and that was when we took off."

Stan laughed. "We're out in the open now, Ebbside. The sun doesn't have anything to rise over."

"Gosh, I forgot about that. But when's it goin' to be daylight? This velvety black is like midnight."

"It's daylight now on the sunny side of our flivver. Want to crawl out and see?"

"No, thanks!" the beach comber groaned. "Even if it was bright as day, I'd still be in the dark about everything. All this space looks just alike to me, and yet you claim we're on our way to a beach comber's paradise."

"Right!" said Stan. "And we'll drop

anchor before long if there's anything to anchor to. There should at least be a month's accumulation of meteorites and —"

He broke off short, stared at a point of light in the velvety black.

"What's up?" The beach comber hugged the walls as Stan checked the speed. "That star's gettin' brighter, ain't it?"

Stan adjusted the telescope. "That's no star. That's our whirlpool!"

Ebbside's eyes bulged. "No kiddin'!"

"Take a look through the telescope. What do you see?"

"Looks like a cluster of fruit under a spotlight—turnin' a little."

The scientist's eyes swept the dials, his hands flew over the controls. "What else, Ebbside?"

"A few grapes floatin' around free from the main ball of fruit."

"That's it, Ebbside, that's it!" He was so excited he could hardly speak. He retarded the ship as fast as he dared. "Take a good look, Ebbside. There's a sight no one has ever seen before. That's a gravitational eddy a rare thing, especially this close to solar space routes. We'll drift in as slow as we can." The bright spot grew.

"How do you know no one's seen it before?"

"Because it only formed last month. Three or four more months and it'll go away, but in the meantime it'll draw a lot of driftwood out of space, and if you don't have some pickings I miss my guess."

Ebbside blinked. In twenty years of beach combing he'd never struck a real bonanza. His mind swam with visions of the valuables so often lost in space. "You mean that everything that gets turned loose in space will wash into this whirlpool?"

"Within a limited radius—yes. This gravitational pocket is due to a tempor-

any arrangement of heavenly bodies. I stumbled onto it when I did an original problem for my astronomy class. Look how it's turning! And see how easy those balls bump and jostle around. They'd be heavy on earth, but they must weigh almost nothing out here."

THE naked eye could now detect the clearly etched cluster of meteontes. Ebb's angular body braced against the telescope. Suddenly he emitted a yell that did justice to his deepest instinct.

"Hooray! A wreck!"

Stan gasped. "Are you sure?"

"As plain as day—a space ship—mangled as perty as you could ask for!"

Stan glanced through the telescope. "By George, you're right. Looks like a Venus-Mars mail boat—an old model—wedged in among a clump of meteorites. Good sign. That crate's probably been drifting in space for two or three years."

As the space flivver eased up toward the whirlpool, Ebb jumped about like a hooked eel, for more promising wreckage appeared.

"Talk about pickin's! You're a marvel, Stan, plowin' through all those leagues of space straight for this spot. How in the name of flyin' fish you knew this dizzy ball of rocks would be hangin' out here in the empty sky is more'n I can— Look, Stan, boxes of cargo scattered around! Say, for once we've struck a vein. Let's anchor down and nab the booty before—before someone comes along to nose us out." Ebb chilled a little with the thought.

"Don't worry. No one ever thinks of space combing. Pilots consider that anything tossed off a ship is lost for good—and ordinarily it is. So this is your own little monopoly, Ebb, and it may prove a pretty good thing before the whirlpool dissolves."

The ship nosed through the floating

balls of rock and ice that spiralled about the central cluster, and drew in close. The gravitational vortex was not strong enough to put the ship's counter motors to a test. The flivver sputtered around the meteoric cluster, the whole of which was no bigger than a battleship rolled into a ball.

A curious floating junkyard. Scraps of cast-off cargo, fuel containers, heaps of frozen waste jumbled together among rounded rocks of all sizes and tints. Two or three shapeless clumps that might have once been human bodies. Here and there unbroken packages that might contain gold or silver—or possibly soap. Ebbtide's eyes glittered.

"It's all yours, pal," said Stan as they scrapped along the dark side of their little planet, flashing a spotlight. "My only object, you remember, was to prove that this existed and make some astronomical studies of it. The salvaging is yours. We'll hang on for ten weeks if all goes well, and then cart your treasure back to earth. Okey?"

"Okey."

"Good. Shall we tie up and step out?"

The ship came to rest on the bright face of the ball, rotated with it through the dark and back again by the time the men donned their space suits.

"I'm dizzy already," said Ebbtide. "Maybe you'd better go first."

THEY passed through the air locks and Ebbtide felt his clumsy oxygen suit puff out against the vacuum. His scared ejaculation reached Stan through earphones. So did every hard swallow. It was Ebbtide's first taste of the void.

"What are your teeth chattering about?" Stan asked as they descended the ladder.

"Those rocks don't look none too solid."

"Right." Stan reached out to a boulder as big as a barrel. "Light as

a soap bubble." He gave it a push. It sailed out into space and floated back like a rubber balloon. Ebb was so surprised he let go the ladder and fell.

He never knew whether he fell up or down, but he fell toward the nearest rock, kicking and squirming. One kick against the rock and off he bounded into space a good two hundred feet. He described a hyperbola and floated back, screeching through the radio like a fire siren.

The two men spent an hour of rolling and creeping over their flimsy little sphere, returned to the ship optimistic. There was frozen food among the wreckage. Locomotion was not so perilous as they at first thought. You couldn't fall off without falling back. Best of all, there was plenty of combing to be done, and more expected; and plenty of astronomical data to gather.

"We'll be as snug here as Robinson Crusoe," Stan mused. He wished Susette Udell could see him now.

"It's all too good to be true," Ebb whined. "Someone's sure to come along and horn in on it."

"We won't let them," the scientist declared. "This little baby planet is ours, and I give you the privilege to name it."

So Ebbtide Jones fixed up a sign and Stan helped him plant it. A proud moment it was for the beach comber as he christened the heavenly body "Jones."

The weeks that followed proved so idyllic for both astronomer and salvager that the latter's instinctive trouble hunches came back. "It's too good to last. Are you sure no one knows about this spot but us?"

A tinge of worry showed in Stan Kendrick's strong face. "No. Other astronomers may figure it out, just as I did."

"Don't you say you figured it out for a class? What's to prevent them from

rocketin' up here?"

Stan got up from his calculating machine and paced the cabin floor. "Most of them didn't follow through on my calculations. Even the professor got hung up. But I remember there were two persons who caught the point. One was a girl I've mentioned—"

"The one who told you that you was —"

"Yes. The other was a stranger who dropped in to visit the class. I didn't like his looks or the way he took my stuff down in writing—so I stopped without actually mentioning the whirlpool—though he may have got it. Later I learned he was a space pilot named Kiger."

Ebbtide groaned. "We'll have him on our necks sooner or later, I feel it in my bones. These pickin's is too rich to go on undisturbed. Say—guess what floated in this mornin'!"

"What?"

"Three murdered Zandonian soldiers in the flashiest uniforms you ever saw!"

CHAPTER III

Zandonian Gems Adrift

THE handsome King Ajo Baustobub sat in his cabin looking at himself in the mirror. It was not his finely chiselled features nor his clear olive complexion—heritage from the best royal blood of Zandonia and Egypt—that impressed him; rather it was the bloodshot eyes, the pouches of sleepless vigilance beneath them. This voyage was terrifying.

Hourly his perils multiplied. Nine of his twelve guardsmen were gone. Murdered, according to Captain Kiger, during encounters with space pirates.

A knock sounded at his door.

"Who it is?"

"Miss Udell."

He turned the key cautiously. The

smartly uniformed hostess entered. As always, her beauty sent a thrill through his manly frame.

"With your permission," he said suavely, "I shall lock the door upon us."

"After all that's happened, I certainly don't blame you." The girl crossed to a luxurious chair, glanced about, let her eyes linger upon the three small trunks of glittering jewels which lay open on the floor.

"You're not afraid—being locked in this room with me?" he pursued.

"Why should I be? I'm simply an official on this liner."

"But you are also very beautiful," he persisted.

She smiled. "Your majesty is too well mannered to cause me any fear. Besides, I carry my own keys to every door."

The king raised an eyebrow in surprise. "Yes, of course." His eyes went to the jewels and back to the girl. He twitched uncomfortably.

"Moreover, I carry a gun," she added calmly. "One never knows what may happen on a space trip. You carry a gun too, I presume?"

"Yes, I—" he gestured toward the table where it lay, newly polished.

"Good. The way things are going, you may need it."

"Yes, I—" The king swallowed a lump of fear, inhaled a breath of boldness. He was a handsome figure in his white uniform, gold braided.

"You are in the greatest danger," the girl said quietly. "I hope you arrive at Venus in safety, but you must keep on your guard."

"Yes, I—" Ajo edged toward the table. "I didn't know when I booked passage that the pirates could be so bad."

Susette looked away for an instant, then faced him with the bombshell: "Do you realize that you are the only

one left on the ship now—except the crew?"

"But my three guardsmen—?"

"The last three are gone."

The king staggered. For a minute he was stupefied. He tried to speak in a controlled voice. "Murdered, of course, by space pirates—as the others were?"

Susette's lips twisted slightly. "So I was told."

Then anger burst like an explosion. The king's fist came down on the table, he snatched up his revolver, sprang toward the door. Susette barred the way. "Your pardon, Miss," he demanded coldly.

"Wait!" she cried. "What are you going to do?"

"Get to the bottom of this!" The bite of hate was in his words. "Face Captain Kiger! Demand to know who has murdered my men!"

"Then you think—"

"Someone on board has done it! I've kept watch every minute since we disposed of the last three bodies—and there has been no pirate ship. The pirates are on board, I tell you! Maybe Kiger is the pirate! Maybe you—" He cut short as the girl paled. "Anyway I'm going to find out!"

He struggled to tear her terrified body from the door.

"No!" she cried. "Don't go out there in a rage!"

He drew back and gazed at her. It was his policy never to trust a beautiful face, but the girl's alarm went through him. He calmed.

"Were the bodies of my last three heroes saved?"

"Yes," she answered. "They are lying in the corridor near the disposal chute, if you wish to see them."

"Perhaps later. For the present—no. Bring me cigarettes, please. And coffee."

She went out, through the corridor, through the dining room, to the grill.

KIGER set the ship's controls and gathered his crew of three into conference. They huddled over a breakfast table near the grill, but made no effort to conceal their words from Susette. She listened as she prepared coffee for the ship's only passenger.

"The coast's clear now," Kiger growled. "One more bullet will finish the job and we'll head for Mars, where those gems will bring the best price. Back home we'll chalk 'em up to space pirates."

One of the men nodded. Vietoff, first mate, grunted. "Where's the need to kill the king? Just go in and demand the ice! Four of us to one of him. He'll fork over."

"And then what comes of him?" Brewer asked.

"That's the point!" snapped Kiger. "We better make a clean job of it. It's safer. We could have pushed them all out, and saved our bullets, but we'd always worry about it, knowing that now and then some one gets lifted out of absolute zero and comes back to life."

Macey grumbled, "My guess is, we'll have trouble on our hands from Ajo. He's got a cold eye and a quick hand—and gun play is bad business in a space ship."

Kiger's heavy jaw jutted. "We can fix that." He called "Udell!"

Susette, starting through the doorway with a tray, turned.

"Come here with that coffee," her superior officer barked. "Here's the thing boys." He fished a small black pill from his pocket and dropped it into the cup. "That'll put him under for twenty-four hours. Before he comes to, we'll plug some lead in his belly and dump him. Simple as A B C. Okay,

sister, run along with that coffee. And then you'd better roll those last three 'heroes' on the trap. We don't want no tale tellers, living or dead."

"Or male or female!" Brewer added, as the girl went out of hearing.

Macey seized on the point. "It's time we knew where the girl stands, Kiger. She's damned independent, if you ask me."

"You're jittery, Macey," the pilot growled. "She stands with us. She's stood by without a murmur while we put the works on twelve guardsmen. She'll never talk."

"The way to be sure," said Vietoff, "is to give her a cut of the swag."

"Cut, hell" Macey cried. "It's hard enough to cut three chests four ways, let alone five."

"Aw, you make me sick," Kiger snarled.

"Yeah? Maybe you've got a crush on the girl," Macey muttered.

"Maybe I have!" Kiger snapped. For an instant his mind jumped back to a vague impression that bothered him—the impression that he had seen the girl somewhere before she came aboard his ship. He threw off the thought and faced his three men. "Go get some sleep while you've got the chance," he ordered.

Though it revolted her, Susette rolled the bodies onto the automatic disposal trap with dispatch, for now she burned with purpose. She reentered the royal cabin. King Ajo had finished his coffee and was already in a heavy stupor.

"His highness may not appreciate this kindness," she whispered to herself, "but it has to be done."

Then stealthily she locked the chests, rolled them out into the corridor and onto the trap. One by one, they plummeted through the automatic air locks and out into space.

An hour later Kiger grew restless at the controls, decided he would clean up the grisly business single-handed. He found Ajo dead to the world. He drew a gun and pressed it against the kingly temple, studied the drooping olive eyelids, heavy with sleep. A moment's hesitation. A glance about the room.

Something disconcerted him. That space on the floor. The jewel cases—where were they? Gone!

A chill of terror went through Kiger. He holstered his gun, stormed about the room. Frantic minutes of vain search—bewilderment—then sullen reflection.

Susette sat in the lounge lost in a book when Kiger strode in and roared at her. "I've just recollected where I saw you, before you were a space hostess!"

"Saw me?" Susette reddened.

"You! It was in a class I visited. A young fellow named Kendrick worked out a problem, and you were there! You caught it!"

"I don't know what you're talking about," the girl stammered.

"Yeah? You were swift enough to catch the problem, and you're swift enough to play your own wits for the gems—"

"But I don't understand—"

"I understand!" the heavy jawed pilot snarled. "I know about the gravitational funnel we're in, the same as you do, and I figure I can find the end of it. We change our course this minute!"

He slammed the door and stalked to the control room.

CHAPTER IV

Crisis Comes to "Jones"

EBBTIDE Jones steadied the signboard, "JONES," while Stan Kendrick piled bucket-sized boulders around its base. Every few days (earth

time) they had to dig it out and replant it for more meteoroids rolled in constantly. The floating rock pile which they called their planet was three times larger than when they came.

Any many times richer! At least, in the beach comber's estimation.

The inpouring wealth kept Ebb so excited he grew thin from forgetting to eat. Every new speck of light that spiralled in from the void met his critical inspection.

Suddenly he dropped the sign and leaped far out into space to bring down something. "Well, I'm a seahoss!" Stan heard him exclaim through the radio, "if it ain't another Zandonian cop! Must be a murder epidemic somewhere out there."

They disposed of the twelfth Zandonian body and took the uniform to Ebb's cache, near the well-hidden space flivver. They pondered glumly. Foul business on the space routes! Pirates! Or possibly an international space chase. The mystery had an ugly look. It troubled Stan; especially when Ebb spoke of the fingernail marks on the wrists of the corpse and said, "There's a gal helpin' with this job!"

Then a week-old newspaper clipping shook out of the uniform and gave them the dazzling story of King Ajo Baustobub, his decision to charter a ship to Venus, take twelve guardsmen and the priceless Zandonian Gems.

Stan grew silent, thoughtful. Ebb kicked himself and bawled like a child. Zandonian Gems at the mercy of pirates! And here he plodded, collecting rocket motors, space guns, pocketbooks, uniforms! Why hadn't he gone in for piracy!

Stan clutched his wrist. Ebb looked up, saw, shrieked, leaped out into space to seize the spiralling trunk, ride it down.

Ten minutes later they sat petrified,

stared into three trunks of glittering gems. Ebb's eyes bugged out against his space helmet. He had lived all his life for this moment.

Stan shook his head. "We can't take them, Ebb."

"*Can't—!*" Ebb gagged like a drowned cat. "But you told me I could have everything! You promised me—"

"I'm sorry, Ebb, but—"

"I'll give you part of it, Stan. I'll split it with you. I was goin' to anyway—"

Stan smiled but remained adamant, even though Ebb's face told him their friendship would shatter. "No, Ebb, it belongs to King Ajo. So far as we know, he's still alive; it's our duty to restore his property to him."

The frustrated Ebb peered into the blackness, desperately praying that the body of King Ajo would come in next. He wouldn't have been surprised, as swiftly as these magic events came.

A silk handkerchief lay in the corner of a jewel chest. Stan wadded it in his hand, stunned to discover it bore the initials, S. U.

"Let's cover these jewels, Ebb," he said. "We're going to have some company, and we'd better watch our step."

THE great space liner nosed into the vortex and crept cautiously several times around the boulder-studded sphere. Spiralling space balls bounced over its nose and rolled off its fins.

Within, the crew pressed their faces against the portholes and grumbled. They had learned Kiger's reason for coming here and they thought him crazy. Recover gems lost in space! Absurd!

"I still think it was the girl that dumped them overboard," said Macey, "even though Ajo claims he did it. I figure he's lyin' to protect her."

"Yeah? Kiger says the king did it." "He's lyin' too, cause he's got a crush on the girl."

"We shoulda got her out of the way beforehand. I'd bet my helmet the stuff's gone for good."

The ship stopped and the captain faced his crew. "All right, you back-biters, before we go look for those gems, I'm ready to buy out any of you that wants to sell your cut. Who's first?"

The men hushed, reconsidered. Kiger gave orders. Baustobub was left securely locked in his cabin. The others donned their space suits, went forth. After much floundering and bouncing out into space, they stumbled upon a path of ropes and scraps of wreckage.

"Someone's been here," Kiger muttered through the radios. "Udell, what do you know about this?"

"No more than you do," the girl answered.

At that moment on the other side of the sphere Stan and Ebb faced each other in surprise. Stan motioned his companion not to speak, scribbled a command to him, "Cut off your transmitter. They're on our wave length."

Edd tried to obey, fumbled, muttered, "How the hell—" before Stan could chop him off. Every word from the party came to their ears. They heard Kiger roar, "Who said that?"

No answer.

"Who said, 'How the hell'?" he repeated. The men looked at each other blankly. "Someone's here!" Kiger snapped. "Follow me close and keep your guns ready. Udell, you walk ahead. You're good protection. Brewer, for God's sake, quit bumping out into space. Can't you tread light and hang on?"

THEY moved to a pole of the sphere where the artificial path ended at a signboard, "JONES." Kiger kicked it

and it sailed over into the dark.

Sun rays caught the figure of a man in space uniform who approached over the curved horizon. Susette gasped, looked for a sign of recognition, but got none.

"Gentlemen," Stan spoke coolly, "and Miss, I welcome you to the planet of Jones. What can I do—"

"Save your gab!" Kiger thundered. "We didn't come for a tea party. We want the gems."

"Mind your manners!" said Stan sharply. "You're trespassing on private property."

"Cut the stallin'! Your friend here, Miss Udell, knows your game as well as I do. Now you cough up three boxes of jewels—"

"If you're referring to the Zandonian gems," Stan came closer to the row of muzzles, "I have every intention of returning them to the owner."

"Then trot 'em out!" Kiger demanded. "The owner is waiting in my ship." He forced Susette to verify this statement, but Stan ignored her words.

"Let him come and claim them!"

Kiger snorted. "You think Ajo Baustobub would risk his life on this shaky rock pile? He sent us to get them."

"Tell him that won't do!" Stan cracked. "I want to see him in person—and ask him who murdered his guards—and why!"

The gun muzzles quivered.

"All right, boys," Kiger snarled. "We can't waste words on this fellow. He knows too much. We'll find the jewels for ourselves. Let him have it!"

Three guns blazed as Stan fell to cover. Hot rays passed over him. He crowded a cluster of barrel sized boulders toward the gunmen, emptied his own automatic at them through the crevices. Shots went wild, men lost their footing, rolling boulders threw

them into a heap.

Stan heard Susette's cry, wondered where she cast her lot and whether her savage superior had captured her, heart and soul. A passing flash through his mind, swift as his muscles. He plunged into the dog pile of men, seized a gun in time to bat a drawn revolver out of Kiger's hands. Then a shot blew the weapon from his own hands, and a blow across his back felled him.

As he fainted off he knew a muzzle came against his space helmet and a girl screamed.

He did not hear the voice that froze the men in their tracks. Ebb's voice that cried, "I've got the jewels packed in, Stan! Ship's all ready. Where are you?"

Kiger smiled. "That simplifies matters. Let's find that ship." A glance told him Stan was out of the picture. "Get along, Udell, and no more of that screaming."

Ebb's wail continued to pour in their ears. "I'm all set, Stan. Where are you?"

The frightened beach comber followed the path half a circumference before he spied the party toiling in his direction. The sun was on him, he saw the guns come up, ducked to cover as the stream of fire poured past him. Chilled to the marrow, he made for the darkened face of the sphere.

Too late he realized his mistake in opening the flivver's hiding place. The path they followed led to it. He fled over the boulders in torment. What to do? If he could only find Stan—or had they killed him?

Mutterings in his earphones sickened him, told him all was lost. "One's ship's as good as another," came Kiger's voice. "We'll pick up the liner later." The four men dragged the flivver out into the open. "Check up on the jewels!" And soon someone re-

ported back. "All three chests in the rear cabin."

Ebb crept closer, looked on, dazed. They gave the lithe ship a push out into space, caught the ladders, made for the air locks. In another moment rockets would fire and the thugs would be off with their booty.

Funny the gal didn't try to get aboard. She stood there like a mute statue. But the instant the last man entered, she set up a cry for Stan that chilled Ebb's blood.

Then her words broke. Out of the black horizon the leaping body of Stan caught the sun's gleam. The sphere's rotation was in his favor. Three low jumps brought him near. Pain showed in his movements as he snatched up something and bounded outward. A strange startling sight.

His leap was true. He caught the rear fin of the drifting boat. He battered the rear porthole with a stone. The glass was stubborn.

Kiger saw from within, caught the danger. If that glass went, the flivver's oxygen went with it. Out to the ladder came Kiger. He swung, seized a deadly grip on the perilously perched body, yanked the struggling, weightless form of Stan through the air locks, into the ship.

Susette screamed, grew weak, as she waited for the sight of the rocket explosion. Sickening realization—Stan had fought and lost!

But Stan's frantic effort gave Ebb his cue. He slid out of his cache carrying an object three times his size—a space cannon. A split second before the rockets fired off, the big gun blazed

at the flivver's nose, blew the control room to smithereens.

THE great space liner sped toward Venus.

Three chests of jewels rode in the cabin of Ajo Baustobub. A prisoner named Kiger found it was no use to wrench at his irons, grew silent. Three persons in the control room made merry.

"I must tell you, Kendrick," said King Ajo, "that Miss Udell is a different person since the ship is in your hands. I knew she was in love with a handsome scientist, but she did not tell me you were also a dashing daredevil."

"I didn't know it myself," laughed Susette, and Stan smiled as she kissed him.

"But tell me more of this strange Ebftime," the king urged. "You say he blew up the ship as it charged off, then everything floated back. But why did he not come with us?"

"He preferred to be picked up on our return trip," said Stan, "so he'll have more time for space combing. It's a mania with him. Just now he has three more uniforms to piece together."

A silence followed.

"It must have been very hard for him to give up those gems," the king said thoughtfully. Then his face lightened with inspiration. "By the way, I wonder if . . . After all, he saved the day for all of us."

Ajo scribbled a note of appreciation, signed his name, tucked it under a trunk lid; then rolled the trunk onto the automatic disposal trap and let it drop into space.

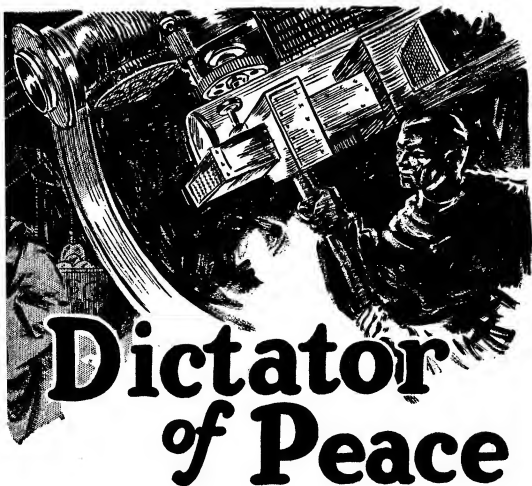




Retterlic replaced the discarded section of bone with a gleaming silver plate

By
DON WILCOX

DR. Retterlic placed a silver plate in Gade Lasher's skull. He knew it would bring agony if the dictator shouted for war. But he couldn't know the operation would be doubly successful...!



Dictator of Peace

CHAPTER I

The Doctor's Secret

ARE we going to knuckle down before the demands of nations that would rob us of our heritage?" cried the bombastic little ruler of the Troxian Empire, waving his arms. Beyond the platform stretched a sea of listeners in brilliant green uniforms and bright colored holiday clothes.

"NO!" came the roar of twenty thousand lusty throats.

"Are we going to be kicked, cheated, spat upon by the powers of the world?"

"NO! NO!" the massed soldiers and civilians thundered, en rapport

with every word and gesture of their fiery leader.

"Are we going to be bluffed —"

A pistol barked.

The Troxian ruler slapped a hand to his head as he reeled and toppled. Before twenty thousand horrified spectators he went down! Their leader! Shot!

Screams and shrieks cut the air. The terror maddened mob tried to crush forward. The assassin, spotted in the front ranks, cried his last. He crumpled under a bath of lead. As if every green uniform were duty bound to help tear him limb from limb, the angry stampede surged by thousands, rode

over itself in terrific frenzy.

Voices came through the amplifiers.

"Be calm. Keep your places. The ruler is not dead! He is only stunned —"

Sporadic cheers went up as these words reached out to the panic stricken multitude. The emergency announcers demanded silence. At last, crushed and breathless, the great crowd hushed to listen.

"His head has only been scratched —"

His head! A low tragic groan spread over the sea of people. Then came an official pronouncement:

"Citizens of Troxia. In a few days our leader will address us again from this platform. Now go to your homes, and remain quiet."

The radio newspapers of millions of homes and offices throughout the civilized world blazoned the story.

And what a story! The dreaded Lasher almost assassinated! What reverberations this would have upon a jittery, peace-starved world!

"If the assassin had only been a better shot!" bemoaned an editorial from Timovia, the state which lay in the path of Troxia's conquests.

The same bitter note sounded among other nations. Before the news was an hour old the outside world declared its verdict: a narrow escape from peace!

For Gade Lasher was the most feared man in the world. He knew all the tricks of the earlier dictators of his century. His peaceful gestures were simply strategies of aggression. His appetite for hate drove him on. He was apparently destined to outdo all his predecessors in remaking the map of the world.

Apparently! But how amazed that world would have been, had it looked in upon the ruler's palace that night. Strange forces were at work, reshaping

the destinies of nations—the strange forces of four powerful characters who played their game behind the scenes. Even the inner governmental circle of the Troxian Empire were not aware of the personal interplay among these four—dictator, general, doctor, and female secretary. Nor did anyone know that one of these would play a secret scientific trump on this night.

Two hours after the attempted assassination, the propaganda artists proclaimed, at the command of General Blegoff, that Lasher's miraculous deliverance from the bullet proved the protecting hand of God. The churches must hold demonstrations of thanksgiving. Prayer for the leader's quick recovery was in order.

AT LASHER'S palace, however, the activities were less ceremonial. Gade Lasher lay unconscious under the spell of ether, his face very white under his famous coal-black pointed mustache and sharp beard. His personal physician and surgeon, Dr. Retterlic, waited while the best diagnosticians of the Troxian capitol came to an agreement.

It was quickly reached. A clot was forming on the brain. The pressure of the depressed skull must be relieved immediately. A section of the bone must be removed.

Retterlic, by virtue of his position, accepted full responsibility for this plan of action. The operation proceeded under the scrutiny of Troxia's most able scientists. By the time his surgeons removed the clot, Retterlic was ready with a perfectly shaped silver plate to replace the discarded section of bone.

A perfect job. In a few days Lasher's fine black hair would grow back to hide the seams in the scalp. The scientists exchanged congratulations upon the swift and perfect workmanship. New reassurances sounded

over the empire's radios. The presses rolled out new headlines.

"Lasher Regains Consciousness."

"Lasher Feeling Fine."

"Lasher Regime Will Continue Unbroken."

At midnight Retterlic left his precious charge in competent hands and went off duty. His face showed strain as he emerged from the medical quarters. He scorned the swarming cameramen and reporters who wanted to make a hero of him, and marched directly to the palace dining room. At last a chance to breathe again and reflect upon the bold thing he had done.

He found Doraine at his favorite table. She was always welcome company.

"The man of the hour!" she hailed him with youthful verve. "Shall we drink to the most important event of your career?"

She and the doctor were close friends in spite of their difference in age. She loved his baldish head, his genial fat face, the sharp glitter of his eyes. Moreover, she appreciated his importance. As confidential secretary to the dictator, she was the only person who knew what the doctor meant to the Lasher regime.

"Most important event?" he asked gruffly. "Why do you say so?"

"Haven't you just snatched the world's most powerful man from death?"

"Not for the first time." As Doraine well knew, he referred to an incident of the great war, a score of years previous, when he dragged Gade Lasher out of a shell hole. "First time I laid eyes on him he was more corpse than corporal. I suppose that will always be called my big moment."

"But you couldn't foresee then that he'd become our dictator."

The doctor grunted. "No more than I can foresee now what may come out of this operation."

Doraine studied the furrows in his high forehead. His manner was strange tonight. He was holding back something.

"At least," he continued, "I hope he'll be more moderate when he gets back on his feet."

"Do you have any reason for hoping that?" the girl asked anxiously.

"That's a bad question to ask a tired doctor after a strenuous evening. You never know how things will work out. Do you think I'd have pulled him out of that shell hole and dragged him back to life if I'd known he would live to tear the peace of the world wide open —"

"To the glory of Troxia!" Doraine put in hastily.

"I should have known what a fire eater he'd be even then. When I found him wounded the air was blue from his cursing. He was a volcano of hate from that day. Now he's got to be calmer. These violent speeches are bad for him. I've told him he's got to stop them."

"Is Lasher's welfare your only concern?" Doraine asked bluntly.

"It's my only *official* concern," the doctor snapped.

BUT there was no need to hide his humanitarian motives from her. There was an unspoken understanding. Neither of them cared to see Lasher go on with his brutal conquests. The leader's commanding personality magnetized them; they, like millions of other Troxians, would follow him unquestioningly. And yet Doraine often marveled at the influence of restraint this quiet, strong-willed doctor wielded. In these erratic times he was the invisible balance wheel of the inner circle.

Still, his own peace motives were



Doraine
She loved a Dictator

plain to her.

"Let me warn you," she said quietly, "General Blegoff's appetite for moderators is growing sharper."

"He'll purge me one of these days." The doctor made a neat slice through the air with his hand.

Doraine looked at him in alarm. Memories of recent vacancies in the inner circle were fresh in her mind. "No, I didn't mean that —"

"I mean it," said the doctor calmly. "And he may have good reason. Good night, Doraine."

He rose abruptly and departed for his quarters.

Someone in green uniform waited at the entrance of his suite. Narrow-eyed General Blegoff. The points of his waxed mustache reached out like the antennae of a trouble-hunting insect.

"Come in," said Dr. Retterlic, unlocking the door. The general entered, refused a chair, accepted a cigaret, and came to the point.

"No complaint on the operation proper. . . . But after he came to consciousness, you were somewhat too free with your advice."

"What advice?" The doctor blinked coolly through his spectacles.

Blegoff advanced a step as if his authority was challenged. "You told Lasher to forget his conquests —"

"For awhile. He needs to rest."

"— and lay off his violent speeches —"

"Yes! By all means!"

"You're treading on dangerous ground, Retterlic, dictating to the dictator."

"For his own good —"

"You're being very presumptuous. If you and Lasher weren't such close friends you'd have faced insubordination charges before this. We all know about that famous rescue of yours when Lasher was lost in a shell hole, but some day you'll overplay your hand."

The doctor lit a pipe calmly to quell the tumult that raged within him. Insubordination! Soft words. If Blegoff only knew what a subtle scientific crime went into that operation—but Retterlic bet his life the general would never know.

"Lasher is very high strung," the doctor drawled. "I'm responsible for his health. If he isn't cautious he'll break down."

"A cautious leader is inconsistent with the Troxian ideal. Your advice is destructive. I officially warn you not to repeat this indiscretion in the future."

The general's jutting jaw, square shoulders, crisp gold braided uniform, made him the personification of authority. He tugged his mustache with finality, whirled, and strode out.

Retterlic locked the door after him and snorted. There was one sure bet. The general was suspicious, but his deepest suspicion fell far short of the truth. For the humanitarian doctor had his own stake in world affairs. Be it crime, treachery, treason—the seed of

restraint was planted, let the purge fall where it may.

His scientific secret. No one would share it—except possibly Doraine. Her silence was golden.

"LASHER GAINS RAPIDLY."

That headline was good for several days to follow. Troxia was stimulated to rejoice, demonstrate, and dream of more conquests. Timovia and other small states prepared for the worst. The green monster would soon move outward again. The world learned that Lasher, eager to make up for lost time, planned to address the hordes of the Troxian capital at an early date.

VISITORS flocked to the palace to inquire whether the little giant who defied assassins was indeed ready for a comeback. They were more than reassured. Lasher's intimate friends declared he was in higher spirits than ever before—a fact which even Dr. Retterlic was at a loss to understand.

Few were privileged to see the reviving leader; none, to read the speech he wrote. Attendants puzzled over his changed demeanor. It must be the rest, thought Retterlic. General Blegoff gave the reporters glowing descriptions. The ruler would undoubtedly launch an even more vigorous military program. The inner circle didn't doubt it. Although Lasher did not commit himself, new purpose burned in his amber eyes.

Doraine grew tense with mounting worries as, day after day, she commanded her office force, relayed confidential messages, absorbed the shock of international pressures.

Lasher being in seclusion, she was the hub of the inner circle—an efficient mechanism. Only when off duty could she reflect upon the bitter seriousness of it all. Then she saw life as a rocket ride through uncharted perils. Every



Gede Lasher
 The world's peace was in his hands

new move brought danger of a crash. Demonstrations of power, urges, intimidations of minorities, bloodless conquests, diplomatic thievery! How helpless she was within it all.

The mighty little man with the severe black mustache and beard often gave her a word of praise; sometimes after hours of tension he seemed to crave her conversation. But the doctor was right, his record proved him a volcano of hate. She could not hope to understand his chaotic nature.

She shared confidences with no one except the baldish doctor. Tonight at their secluded table in the dining hall she poured out her fears. Retterlic listened and ate.

"I can't understand what he's about," she concluded. "He's on fire with power as never before. I'm afraid he'll never stop until he brings the whole mad world down on us."

The doctor was deliberate about responding. His manner had been reserved since the night of the operation. He searched her eyes. "You hate to see him drench the world in blood, don't you? . . . You even feel a personal

fondness for him."

Doraine was on the defensive. "He's the ruler of Troxia. It's my duty to respect him."

"But you are fond of him," the doctor persisted.

The girl faced the challenge honestly. "Of course. I'm thrilled—stimulated—by the very sight of him. I'm swept off my feet by his masterful personality. But who isn't? That's what has happened to all of Troxia. We've been overwhelmed by a powerful actor!"

"Actor—yes," the doctor groaned. "And to think, as a boy he was a stage hand who *wanted* to act—and they wouldn't give him a chance! Now the world's his stage, and he takes its hatred for applause."

A waiter came and went, leaving silence in his wake. Retterlic studied the girl's troubled face. Now was the time to tell her.

"I've something to confide, Doraine."

"I've been waiting," she answered quietly, "and I know it must be something very serious."

"Yes." The doctor sought his pipe and lit it. "Lasher is politically dead. That is, I've deliberately thrown a fatal wrench in his machinery."

"How could that be possible?"

"By a scientific trick. It came to me just before we operated. I acted on impulse. By the time the other surgeons removed the clot I was ready."

Terror came into the girl's face.

"Don't be frightened," said Retterlic. "If Lasher obeys my orders and keeps his voice down when he speaks—"

"But he *can't* do that! Whenever the crowds cheer him he has to come back in that awful rousing voice—"

"And they thrill to that voice. That's why they share his hatreds. The vicious circle! The key to Troxia's madness!" The doctor shook his head bitterly. "But from now on, Gade Lasher will

avoid that rabble-rousing tone."

"And if he doesn't—?"

"He'll get a shattering headache too painful to endure. That plate I put in his skull was more than just a slab of silver. It's a delicate instrument made to resound to the shrill pitch of his rabble-rousing voice. I turned it to a phonograph record of one of his speech. When that vibrates in his skull—"

The doctor cut short. Loud speakers boomed through the dining hall.

"Official announcement! Next Friday at two o'clock Gade Lasher will speak to the citizens of Troxia from the Capitol Park. His message will be broadcast to the world."

CHAPTER II

Lasher, the Mystery Man

THE world held its breath, waited for Friday. Every statesman speculated; so did every professor, barber, soldier, office boy. Words rolled from the presses by millions to explain what Gade Lasher would probably do.

Was he determined to march his green army straight across Timovia? If so, he would come face-to-face with a stubborn barrier of world powers. Unfriendly ones. Was he set to fight the world? Thousands of questions were involved. The world dared think only in questions. For Gade Lasher revealed nothing.

As one sharp international correspondent observed, "All our prediction may be idle. Gade Lasher is a mystery man. He has said so little since the bullet ridged his head that no one knows what is planning. He has isolated himself from everyone, even his own inner circle. His few statements since his operation boil down to: 'I feel better every day . . . I'm a new man

... I regret this waste of time ... My course is clear ... I shall speak to the world on Friday ... I have much to do ...'

"These statements may mean that Lasher is ready to set off the powder keg. Or they may mean something else. We shall know soon. In the meantime only one thing is certain: the world expects trouble from Lasher and he knows it."

Thoughtful people cocked an ear to this critical note. Perhaps Lasher was a mystery man. But the masses in all nations believed just one thing: the Troxian dictator would set off the powder keg on Friday.

Troxia became a pandemonium of patriotism. The Troxian ideals! Conquest! War! Everyone seemed to take up the cry. Skeptics hushed, wise men held their tongues, heartsick wives and mothers did their weeping in private.

Tons of letters poured to the palace urging Lasher on. Generals itched for action, promotions. One nod from their leader and they would hurl their green-clad thousands at the world. Clergymen pledged their prayers, school children volunteered to take over the factory work, some women asked the right to bear arms.

Gade Lasher's burning amber eyes widened with wonderment. He did not read the carloads of mail, but his offices prepared daily charts so he saw at a glance how the nation's war sentiments rose. He bit his lips.

What had he done to cause this rising tide of war madness? Since his operation—*nothing*, except to announce an important speech. This spontaneous rally to conflict was the product of forces he had set into motion months in the past. Forces that would sweep him and Troxia into an international debacle.

Strange to say, he sickened at the

thought. As if a germ of new conscience sought life within him. As if he valued peace. As if the currents of greed and strife and brutality he had generated in the past now horrified him.

Who was he, to have this monstrous bloodthirsty war machine on his hands? Gade Lasher, the dictator of Troxia. The most feared man in the world. The tyrant who purged on impulse. The ruler who hungered for territory, riches, power. The leader who hypnotized the masses of followers with his own lust for hatred. He was Gade Lasher.

And yet he was no longer *that* Gade Lasher. Something had transformed him.

He knew what it was—knew it soon after his operation—and he marvelled that such a change could happen.

No one else knew. Even Retterlic did not suspect. But Gade Lasher knew that when the doctor removed that section of skull he not only cared for the present wound. Unwittingly he also relieved an old pressure on the brain—a souvenir from an encounter in the great war. After nineteen years the pressure was gone. Strangely, Lasher was a new man. He was suddenly freed from his appetite for hate.

The world was a different color and he surveyed it in amazement. A few weeks ago it had been a plaything to satiate his paranoid cravings. Now it was a world of bombs waiting for him to touch the fuse. Every instrument of war he had set in motion came like a boomerang at his sanity.

In a wheeled chair he moved through his private chambers and offices. Every official document, every signed order, every blood stained purge list, every glaring map studded with colored pins mocked him. A mad world on his hands!

What could he do? Think! Plan! Act! Use the awful power at his com-

mand to undo the evil works he had wrought. Confront the millions who had followed him into this mire. Challenge them to turn with him, about face! Back over the hard, blood drenched trail to a saner world. A world of peace and good will. That was his only ideal now.

Would they follow him?

That question tore at his vitals. Sleepless hours could not answer it. Only one answer came. Go to them, transformed! Face them! *Speak* to them!

THE days required to regain his strength seemed endless to Lasher. But he came back rapidly. This blazing new vision generated vitality within him. He must not bleed his energies with futile remorse. He would need power as never before if he was to repay his terrible debt to civilization.

It was a frightening thing to undertake. No great leader had ever, to his knowledge, survived a drastic change of decisions. To commanders of men, reversals are suicide.

But there was one trick upon which Gade Lasher fastened his hopes—one bright promise through all his black hours of torment—one ability that never failed him: his gift of oratory. The emotional ring of his vibrant voice always carried his listeners. It had never let him down. Now it was his one chance to turn the tide. On Friday he would speak.

Doraine was startled to observe the dictator's demeanor. Ordinarily he gloated in manifestations of Troxian patriotism. Now he seemed to grow feverish as the rising pressures of his people focused upon him. He was an enigma. What strange fires burned within him? She wondered.

He paced the floors incessantly, a growing torrent of power. Dr. Retter-

lic could not make him rest. He felt too strong. He'd already rested too much. Stupid waste of time. Too much to do.

Retterlic urged to no avail. As the date of the speech drew near, his restraining influence melted away. It was idle for him to warn against using an emotional voice.

"Keep my emotions down!" the dictator cracked savagely. "I need my emotions as never before. Tomorrow when I speak my voice will shake the very foundations of hell!"

The doctor shook his head and turned to go. "Do you ever rehearse your speeches aloud?" he asked.

"Never."

The doctor looked grave as he emerged from the dictator's reception room. Doraine shuddered to read his eyes. He did not stop to talk with her.

She counted the hours until the approaching calamity. Nothing could stop it now. With every glimpse of Lasher, every sound of his voice over the wires or through the door she quailed. To think of the awful instrument he carried in his head. There it hid, like a death trap, waiting to spring.

Suddenly Doraine felt a wild desire to tell him. Betray the doctor. Save Gade Lasher from the unspeakable humiliation that tomorrow was sure to bring—

GENERAL Blegoff was before her, beating a fist on her desk, demanding attention.

"I must see Lasher!" It was the demand of Troxia's greatest general, the man in charge of the armed forces and the secret police.

"I'm sorry, General Blegoff, but our leader positively refuses—"

"I won't be put off any longer." He bit his words angrily. "Not one member of the military staff has conferred

with him for days. It's time he told us his plans. How can the armed forces prepare to strike if he keeps us in the dark?"

"Perhaps he doesn't plan to strike, or he would have told you."

"Then why doesn't he—" the angry general broke off as a new bolt struck him. "Yes, perhaps he doesn't—" His fingers sought the ends of his waxed mustache.

"I'll tell him you inquired," said Doraine conclusively.

"By the way," Blegoff spoke in an oily voice, "How much times does our illustrious doctor spend with Lasher?"

"He makes only his regular calls."

"Regular calls, eh!" The general's thin lips drew back in a jealous smirk. "Nice privilege, with everyone else shut out. Him with his moderation talk. Just the chance he wants—"

"General Blegoff, you've no reason to—"

"I've plenty of reason! It's my business to be suspicious of everyone. Lasher expects me to arrest and purge as I see fit. As head of the secret police it's my duty. I'm the most responsible man Lasher's got!" He beat his fist on the desk like a rivet gun. "And yet I can't go in to see him. That damned doctor with his poison peace talk goes in every day. All I get is a closed door!"

"But General Blegoff—"

The big man was red with fury. He towered straight in his green uniform, looked to the door.

"I'm going in. Now!"

"But the dictator is seeing on one!" Doraine cried defiantly, her back and her palms against the door.

"He can tell me that to my face!" Blegoff snarled. With a quick forward step he caught the girl by the wrist and flung her to the floor, swung the door open, looked into the burning amber

eyes of Gade Lasher.

He stepped back in surprise. Another step as a swift Lasher hand slapped him across the cheek.

The dictator helped the girl to her feet, then turned his glare back upon his chief of military forces. Blegoff paled; the marks of the slap stood out blood red. He saluted and tried to mumble an explanation.

The black bearded little dictator returned the salute, cut his words short. "When I want to see you, General Blegoff, my confidential secretary will let you know. Good day."

The husky general marched out, crimson returning to his face.

Doraine murmured her thanks to Gade Lasher. The powerful little figure bowed slightly and returned to seclusion. She gazed after him, trembled with emotion that was not altogether fear, dreaded the morrow that promised to crush him.

FRIDAY noon—a chill went over the civilized world. Nations waited like animals crouched in corners. Many a president and premier felt a sickness in the pit of the stomach. Radio announcers charged the air with ominous words. Telecasts sent forth the vivid picture: hundreds of thousands of Troxians massed at Capitol Park, uniforms gleaming, banners flying, hearts pounding.

Friday noon. The parade of state officials set forth from the palace, a train of green and gold splendor. Military bands played, troops marched, war machines rattled, silk flags flamed in the sun.

Doraine watched from her office window until the cheering crowds marched out of sight. She thought only of Gade Lasher. The doctor was right after all; this war madness must stop. The dictator would not listen to Retterlic's plea

for moderation; then let him go ahead and trap himself with his own violence. The girl held back angry tears that came with these thoughts.

She went back to her desk. Two envelopes caught her eye. The small one was a note from a friend in one of the other offices. The friend had enclosed an order rescued from a wastebasket. Addressed to a corporal of the secret police, it read:

"Escort Retterlic to Capitol Park and stay with him. I have reason to believe he has wielded a malicious influence over our leader. If Lasher's speech proves this judgment correct, take care of the doctor at once. Signed, Blegoff."

Doraine's white, quivering hand reached for the other envelope. It was addressed to her in the familiar handwriting of Gade Lasher. It contained a manuscript—his speech; also a note to her:

"Doraine: Please make copies for the press as usual, and release when I have finished delivering.

"You may be surprised at the non-militant tone of this speech. Confidentially, an amazing change has come over me Retterlic doesn't know what wonders his operation worked. I now recognize that my past leadership has been madness. My one burning desire is to restore peace to the world. I know the odds are against me, but I have one potent weapon—my voice. So wish me luck today.

"I tell you these things as a friend. If I fail in my one great motive, you, at least, will understand that I have tried to undo my wrongs. Affectionately, Gade Lasher."

Everything went cold for Doraine. She buried her face in her chill hands. For the present her wits were paralyzed. She was only aware that the world about her was crashing to bits. No one could catch it now.

Vaguely she heard the radio announcer say that Gade Lasher was about to speak.

CHAPTER III

Madness Reigns in Troxia

THE black bearded little ruler of the Troxian Empire advanced to the microphones. The crowd roared—a long, deafening ovation to their hero returned from the shadow of death. Lasher saluted in response to tens of thousands of saluting arms.

"My people of Troxia—" his calm voice carried out over the sea of humans, and again they broke loose in thunderous cheer. At last they silenced, ready for him to open fire. The air grew tense with expectation.

They knew the pattern of his former speeches, which always fed their hungers. He would inflame them from the outset by ranting upon the bitter grievances they suffered from the outside world, then challenge them to demand their rights even if war was the cost, and finally close with a passionate plea that the other nations meet these demands to save the peace of the world. This was the speech the Troxian people and the fear-struck world expected. They listened, breathless.

Lasher's first words came forth in a surprisingly mild, genial voice. He thanked the people for this immense reception and expressed pleasure at returning to them whole and sound.

He assured them that his health was never better, his will to meet their needs never stronger. A stout applause. The multitude caught up his rising magnetism.

Suddenly his voice gathered volume, his arms slashed the air, he plunged into the fire of his message.

"My people of Troxia, nations of the

world, I come to you today to decry the sinister forces that threaten to plunge civilization into an unprecedented cataclysm of blood. I have seen those forces grow from a trickling spring of hatred into a rushing torrent of death and destruction. But it is not too late to dam the flood. People of Troxia, nations of the world, I come to you today in the name of PEACE!"

His voice lifted. The final word shot forth in such a shrill, penetrating tone that the vast multitude trembled.

The dramatic Lasher stopped short, seized his head. A sharp pain vibrated through his skull. The spectators saw, gasped. Perhaps another assassin's bullet had—

No, it was only a chance gesture, for the leader hurled a fist and cried the key word again.

"PEACE! !"

Again he clutched his head. His face twisted in pain. The sea of spectators murmured. Their massed voices rolled out over the world's radios in a low, troubled roar.

"PEACE! ! !"

That soul shaking voice again—and with it, the face of torture. Both hands to the head. The body swayed, then stiffened with determination.

"PEACE! ! !"

Officials on the platform jumped to their feet, started toward their stricken leader. The crowds surged with alarm.

"TROXIA! ! !" Gade Lasher cried. "TROX—"

He went down in a white faint, his steel fingers gripping his head. Uniformed men swarmed over him, shouted, struggled to loosen his clothing, called for Dr. Retterlic.

DISORDER turned to pandemonium. The raging crowd pressed in all directions. Radio and television riveted the civilized world in a grip of

excitement.

An announcer barked, "Dr. Retterlic! Dr. Retterlic! Where are you? Gade Lasher is calling for you! Dr. Retter—"

Another voice switched in.

"Ladies and gentlemen, a tragic thing has happened. No one knows as yet just how or why, but Gade Lasher apparently became desperately ill while in the midst of his speech and fainted away . . .

"He is now being carried to an ambulance. His eyes are open, but he looks to be a very sick man . . . Several doctors are with him; however, he is still calling for his personal physician, Dr. Retterlic, who cannot be located at the moment. He is writhing in pain, clutching his head as if he has a terrific headache . . .

"Some state officials and doctors are getting into the ambulance with him . . . They will drive back to the palace at once.

"I gather, from the rapid fire talk, that our leader must have suffered a relapse from his brain operation of a few weeks ago following an attempted assassination, but we will have more definite information for you as soon as Dr. Retterlic is found. There seems to be some mystery surrounding Retterlic's sudden absence . . .

"The sirens you hear are the motored police breaking a path for the ambulance, and now they are speeding away from us, back toward the palace . . ."

The storm center quickly transferred from the park to the palace. An hour of nervous, clamorous waiting outside the medical quarters. Then suddenly the doors swung open and the doctors emerged in a body.

News correspondents, officials, radio casters pounced at them, buried them under an avalanche of questions.

Is he alive? What's wrong? Where

is he? What happened? Give us the facts. Is he conscious? What does he say?

Before a single doctor breathed an answer, the phalanx of questioners stopped short, brought up their arms in salute. The dictator himself strode into their presence. His personal guards accompanied him, nervously alert, dizzy from their master's unaccountable behavior, powerless to restrain him.

GADE Lasher was neither dizzy nor ill. His dramatic little figure electrified the room. His eyes flashed, his bearded chin thrust forward.

"You want to know how I am," he snapped. "I'm perfectly well. I haven't been shot or stabbed or poisoned. I'm sound and I'm sane."

A cold hush held the room. No one spoke, but every countenance asked: What happened?

"You wonder why I fell during my speech." His tone moderated. "I can only answer that a violent pain suddenly cut through my skull. I tried to ignore it. It came sharper and I fainted. A few minutes later it passed. There's nothing left of it now. Probably gone for good. The whole matter is of no consequence."

The listeners stood petrified with curiosity. Lasher continued:

"Why did it come? That, I can't answer. Neither can these doctors." He laughed lightly. "They've buzzed around me like a swarm of bees and they can't find a symptom of anything. Most of them witnessed the operation on my brain and they know it was a perfect job. So that's out of the question."

His voice grew sharper. "Unfortunately my personal physician is still missing. The secret police fear he has met with foul play. When they find

him, I'll undergo further examination. In the meantime, have no worries."

The crowd rustled uneasily. Pencils poised over notebooks. Cameras flashed.

"And now you wonder what to tell the public about my unfinished speech." The message imprisoned in Gade Lasher's brain was like an explosive whose fuse had been cut. His voice gathered emotion with every word. "Tell them I'll come back tomorrow and give them a speech they'll never forget."

One of the doctors started to raise a warning hand. Lasher's eyes snapped, his head tossed with confidence. "Tomorrow they shall hear! They *must* hear!" He shouted with fervor. "The world must know my plans for PEACE! ! !"

Down went Gade Lasher! As if that final word set off a bolt of lightning in the war lord's brain. He looked up, stung with more than pain, humiliated, shaken by a dread something he couldn't understand.

The doctors helped him up from the floor and ushered him away. The people walked out shaking their heads sadly. The only person left in the room was a girl, whose eyes glistened with tears.

Doraine cried because she wanted to tell her master the awful secret that burned in her heart. She couldn't. Not only because of her promise to Retterlic. There was Lasher's faith in Retterlic. She could not think of exposing the doctor as a traitor, knowing how the dictator valued that friendship. Gade Lasher would go to pieces before her very eyes—the thought sickened her—but he must never know.

She burst into tears afresh as she thought of Retterlic's dilemma. At this moment he was on his way to his doom—a dungeon or perhaps death. A word from her might save him—but what

tragedy would follow! Lasher would probe him regarding head pains. Sooner or later the truth would out! And then—who knows where the knife of the purge might fall?

And if the dictator should have another operation, he might emerge the demon of hate once more. No, Doraïne's lips were sealed. She must avoid conferences with Lasher for fear her sentiments break her silence.

GADÉ Lasher made no more speeches that week, nor the next, nor the next. He cancelled all public appearances, press interviews, conferences with the inner circle. But he did not hide himself away completely. He strode through the executive offices of the palace like a walking bomb that might explode without warning. Secretaries could feel the tension the instant he entered a room.

No one who saw him could think him ill. On the contrary, he bristled with energy and purpose. What purpose, no one could guess. He went from desk to desk, examined official documents, orders that bore his signature. He carried a cancellation stamp and used it freely to veto former arrangements. He removed the colored pins from the maps of projected campaigns.

His actions were swift and decisive, hardly the rash, desperate movements of a mad man. But he was plainly under terrific strain. He spoke only in the thick, restrained voice of one in great conflict.

He pressed the police to find Retterlic, without effect.

The Troxian propagandists were embarrassed, along with editorialists, military officials, and a host of others, to explain and justify the mystery man before a bewildered public. Since Lasher made no statement, they were forced to make what they could of his

unfinished speech. After, much squirming, they centered upon a suitable interpretation.

"We know Gade Lasher too well to be disappointed by his opening cry for peace. Had he been able to finish his speech, he would of course have told *how* our armed forces must achieve that peace. Timovia stands as a barrier to our progress. As soon as our leader sees fit, we shall move forward."

The spokesmen of outside nations came to practically the same conclusion, only their version was, "We know Gade Lasher too well to be *fooled* by his opening cry for peace —"

The ruler of Troxia sat in his private study, alone. His fingers pushed over his white forehead and through his fine black hair. His amber eyes looked up, glared at themselves in a mirror across the room, studied the coal black mustache and sharp pointed beard, saw lines of hateful scorn about the lips, the lust for death in the flaring nostrils. That was the Gade Lasher the world knew. The most obeyed, most feared, most despised man alive.

And now he hated himself, hated every word he had spoken, every deed he had done for the past nineteen years. He had loosed his flood of hate upon civilization. He would drown in that flood. Though he glimpsed the light of peace and craved with all his being to bear that torch, it was surely too late. Every hour brought greater pressures upon him from those poor, blind, dogged Troxians he had taught to hunger for the shabby glories of war.

If he could only cry out against it all! Cry out with his vibrant voice until he went down under the fire of his enraged, betrayed followers! Cry out for *peace!*

But now the very word chilled him. He dare not cry his feelings. Even his voice, his unfailing weapon, turned on

him, stabbed him with unbearable pains.

Bitter irony, to writhe with power and burn with a zeal to save the world from catastrophe, and yet be bound to himself! He could not endure it! He would go mad—

He turned away from the mirror, listened. Drums, marching feet sounded up from the streets. More soldiers arriving for his inspection before they departed for the border of Timovia.

CHAPTER IV

A Ruler Against Himself

THE rhythmic thud came closer, echoed up through the spacious open hallways of the palace. Gade Lasher froze. His habits revolted. Body and will refused to function. Every ounce of his being rebelled against duty.

Troops ready for the Timovian border! Yet he, the master of Troxia, could not make himself march down to review them! A ruler divided against himself! God, what a numbness!

The telephone buzzed. That was someone calling to tell him the regiments waited, ready for inspection. He could not move. He was paralyzed as in a nightmare. Perhaps this was hysteria—the beginning of the end—the brink of collapse? For days he had dodged crises, avoided contacts with the inner circle, postponed his conference with Blegoff, refused to answer notes from foreign powers.

And now this tiny thing caught him cold, tipped the scales of inner rebellion. A review of troops! Absurd! Ordinarily he took such matters in his stride. That was the old Lasher. He gloated to parade before his armies, to watch them catch fire from his torch of hate.

Breaking out of his freeze, he forced himself to the telephone. He would take refuge in a subterfuge. He must maintain a front.

"Officer? . . . March your troops through the left wing of the palace, past the giant television mirror. I shall review them from where I am, by television."

"Very well, your honor."

As soon as the images of marching men began to cross the rectangular television in his study, the feverish Lasher signed an okay and cut the switch. He paced, tore at the tails of his black lounging coat, threw his head of fine black hair this way and that. He was a trapped mad man. This psychological torture could not go on. If only he could speak —! If only Dr. Retterlic could be found! Perhaps Retterlic could stop the pains. But that would not check his madness. How could he hope to weld peace out of the flames of war? That conflict had no answer—none except mental collapse—the tragic answer that nature held before him so temptingly at this very moment.

"If I could only talk with someone —" His thoughts shot out on erratic tangents. "Dorine . . . lovely . . . Damned Blegoff! Retterlic wouldn't desert . . . Someone murdered him. . . . I can't shout . . . can't cry . . . Wild pains. . . . Yet I am the Troxian ideal . . . the world's bad boy. . . . Those last purges cut too deep. . . . Rogler and Ance were a bloody mess. . . . I was acting . . . acting for the world. . . . How soon will the powers close in? . . . I'm wasting time. . . . But it's too late for peace. . . . They'll never believe I've changed. . . . My very face. . . . That mirror is too searching. . . . If I shaved them off. . . . But Doraine. . . . She'd never believe there could be love in my heart. . . . If I shave them off. . . . A new

man? . . . But what? . . . Escape in a plane? . . . Some desert isle? . . . Burn out with remorse . . . with the world in flames? . . . Must get a grip on myself. . . . Peace! . . . Cry for it. . . . Let the pain kill me. . . . D a m n e d telephones. . . . Blegoff. . . . He's waiting. . . . Face him! He doesn't know I've turned. . . . He wouldn't dare. . . . Cow him! . . . Then prepare . . . Tell Doraine. . . . Give her a code. Shave them off . . . go . . . take a chance on the fates. . . . Now, pull myself together!"

He snatched up the telephone.

"Doraine, I've got to talk with you. . . . Yes, I remembered that I ordered Blegoff to come for an interview. . . . Very well, send him in."

THE two men faced each other, charged the room with the electric clash of sensitive nerves.

"General Blegoff," the dictator spoke in a brittle voice, "I can't understand why your secret police fail to find any trace of Dr. Retterlic. Is this particular disappearance beyond their powers?"

The black coated little ruler moved dramatically across the lush carpeted floor, held his penetrating amber eyes on the general. Blegoff's handsome uniformed figure stood solidly; his face betrayed no emotion as he spoke.

"I'm not surprised at your concern, your honor. I realize the doctor was indispensable to your physical welfare."

Lasher caught the implication—a jibe at his unfinished speech—but revealed no anger.

"More than that, Blegoff," he said with intense sincerity, "he is a friend."

"And a counsellor," the general added. His tone carried jealousy and accusation.

"You're jumping at conclusions,

Blegoff," Lasher snapped. "I want your secret police to find Retterlic, whether he's living or dead. Do you understand?"

The general hesitated, his face warmed. He played for an offense as the best defence. "These are very trying times for the secret police, your honor, especially since you cancelled some of our powers for swift executions. You realize —" A sharp flash of amber eyes told the general to be careful how he spoke. But he was desperate. "Unfortunately, some misinterpretations of your speech have started an ugly wave of peace agitators —"

"Blegoff!"

The general made a perfunctory salute. "My apologies if the reminder is painful. Possibly my anxiety for the Troxian ideal has overworked my nerves." He met Lasher's glare. "Now that all the unfriendly powers are packing troops on the farther boundaries of Timovia, and we have passed up our original date to strike, perhaps my anxiety —"

The dictator cut in. "There's no occasion for anxiety if we don't strike," he stormed. "As long as we keep out of Timovia —"

He caught himself. Blegoff's mouth opened with shock. For a moment neither man spoke, but both knew that last speech was a severe blunder. A bad slip for a dictator. Anyone else who dared question Troxia's destiny in Timovia could expect arrest.

Blegoff fought back an evil smile, lit a cigaret, walked around his tempestuous little master, who breathed like a racer caught changing colors before the finish.

"Gade Lasher, something's happened to you. What is it?"

The little volcano did not trust himself to answer.

"I've got a right to know!" the general demanded. "As head of your armed forces, I'm the life blood of your personal power. But I've got to tell you, *your honor*, that my allegiance is not to any man, but to an ideal—the destiny of Troxia! It permeates every drop of my blood. For that ideal I'll send armies into hell—and they'll obey without a question. They're a blind mechanism, built to advance the Troxian ideal, and by God they'll die advancing it. BUT—if they suspect their figurehead has changed one iota —"

Blegoff paused, wondered how far he dared go. The dramatic little figure sat in a frozen stare, a strange mood for the proud, bristling Gade Lasher. The general lowered his voice.

"You've changed, Lasher. I see through it now. Retterlic is at the bottom of it. After the operation you were too warm toward him—gave him too much rope."

"You're off on the wrong foot," Lasher said quietly, but the general, drunk with his own boldness, plunged on:

"He poured his poison peace talk in your ears. You fell for it. Then, when you started to pass it on to the people in your speech, he walked out on you—left you dancing to his music —" Blegoff couldn't stop now. "But you saw the people didn't swallow it, so you used your quick wits and passed out with a headache! Very neat."

"Is that all?" Lasher asked, his face tinged with an angry smile.

"I hope I make myself clear that I consider Retterlic has been a menace —"

"You make yourself perfectly clear, Blegoff." As Lasher spoke he picked up a telephone that connected with his personal bodyguards who waited beyond his immediate walls.

"Purple Guards! Stand ready for

emergency. I've just learned who is responsible for Retterlic's disappearance."

HE TURNED on Blegoff. The husky general went white, tried to move his quivering lips.

"All right, Blegoff, where is he?" The little man moved toward him. The general's words wouldn't come. His glibness was spent. He moved backward, step by step, his eyes locked by the maniacal gleam of Lasher's face, his blood chilled by the knowledge that Purple Guards might be pointing guns through partitions.

"He—he— isn't dead," he stammered. Wild fear shook incoherent words from his mouth as he tried to explain. "I'll find him —"

His fingers trembled, his burning cigaret dropped to the rug. Lasher's slight gesture told him to pick it up. He obeyed, but as he straightened up, his eyes still looked to the floor. Something held his attention—an ugly dark patch on the carpet—a blood stain reminiscent of another night in Lasher's study. He remembered well. Rogler and Ance had been members of the inner circle too. A messy deal, even for Blegoff. Lasher had helped him finish it.

His terrified eyes came up. He quailed. "Don't kill me, Lasher!—I promise —"

"I'm not going to kill you. Go. Don't come back till you bring me Retterlic. Our armies stand where they are until further notice. Go."

The general mustered strength to make a nervous salute and march out.

Lasher seized a telephone. "Doraine? . . . Thanks for the favor. I was in deep water until you flashed that note on the television. Didn't know you had the goods on him."

"I've tried to inform you for several days but —"

"I understand. I've got to talk with you at once, Doraine—got to make some plans before hell breaks loose." He hung up and bolted for Doraine's private office.

DORAINÉ touched her face with make-up. She wished she could put sealing wax over her lips. It was dreadful—even criminal—keeping explosive secrets from her ruler. But she remembered the wise old doctor's vision of a saner Troxia and a happier world, once Lasher's terrible power collapsed.

Then the dramatic figure strode in and her heart pounded. She forgot nations and destinies and thought only of this tortured man. He needed her. The least she could do was help him cushion his inevitable fall.

He talked rapidly, erratically. His quarrel with Blegoff hung over him. He loosed his inner thoughts as a tornado scatters debris.

Doraine shuddered. He was cracking up, all right. No wonder. Hungry, famished for peace, yet haunted constantly by his own war menace. Hurling into the faces of world powers by his own catapult. Utterly powerless to resist his own momentum, now that his voice—his whip over the people—cut him down.

"Maybe there'll still be a chance for me," he gritted, "after Retterlic comes back and mends my head."

The girl trembled. How strong would his peaceful sentiments be, she wondered, if he knew the truth? Blegoff was already on the spot for his deceit. What chance would the doctor have who planted torture in the ruler's head? Or the confidential secretary who kept secrets from him? Or the Troxian Empire, if a reign of terror broke loose from the palace?

She felt his hand grip hers as he pressed her for advice. Desperate, his

judgment frayed, he was on the ragged edge of rash action. A word from her would start him off toward the North Pole or the Moon—so long as he went on a mission of peace. He would go forth and arouse the world—

But there was that stubborn barrier again. It intruded upon every plan. The very word "PEACE!" recalled it. If Dr. Retterlic —

A buzzer sounded. Blegoff called from his quarters, much disturbed. Doraine turned the televisior to Lasher.

"I regret to report," the general said with alarm, "that upon phoning Molingbad Castle for Dr. Retterlic's release, I learn that he has escaped —"

"Escaped!!"

"There's no trace as yet, your honor."

"Well, there'd better *be* a trace!"

"I'll go to Molingbad at once to investigate personally," said Blegoff.

Lasher nodded and snapped off with a groan. Retterlic—his one hope! Out of the picture—perhaps for good. He would never trust anyone else to treat his head. He began to rave.

"Your honor." The girl's sympathetic manner quieted him. "I've something to tell you. . . . You mustn't hope that Dr. Retterlic will ever stop the pains that come with your emotional voice. . . . Don't ask me to tell you why. Just—believe me."

With his hands clamped over his head and his wide eyes staring, the crushed little man froze. Minutes passed, an hour, and more. The figure did not move. Doraine spoke to him, placed coffee before him, tried to divert his thoughts. He remained immovable. At last she went out to get an attendant, and when she returned he was gone.

CHAPTER V

On the Border

MONTHS later the weary figure of Dr. Retterlic plodded along the

mountain path toward the hidden Kaable Inn. The teasing notes of old Kaable's bassoon echoed closer. There sat the Timovian inn keeper himself, his long legs dangling over the precipitous porch steps, his peasant clothes giving off brilliant colors under the spring sun. Brilliant music he made, too, thought the doctor.

The notes stopped, the angling figure came forward with a ready handshake.

"Well, if it isn't my old friend Doc!" He could never remember Retterlic's name. "Back for another visit. Welcome! How do you find things in Troxia?"

The doctor dropped into a rustic chair and sketched his story. "I haven't been back to Troxia. Been working on this side of the border. So many refugees needed assistance that I changed my plans. In fact, I may never return to Troxia again."

"I'm glad," said Kaable. "It's like I told you last fall, when you had just escaped from prison. Once out, better stay out."

"I've had a hard winter," Retterlic continued. "Trobian ruffians made lots of work. You know how they do—steal over at night, smash a few Timovian heads, post some Trobian propaganda, and steal back again. I'm so worn out from mending heads that I came back here for a rest. Hope you don't have too many guests on hand."

"None at present," said Kaable. "Not many come this route. Too difficult, you know. I guess that's why the Trobian soldiers never bother to guard it. I've had a slim winter—only one *pay* customer since you left. But he rolled in money, and thank Providence he hung on all winter. By the way, there's a curiosity." Kaable's long, gnarled face beamed. "You should have been here. He would have hired you, I'll bet my bassoon, if you can fix

heads. His headaches gave him fits. I never knew anyone to put up such a scrap to overcome a handicap. I hated to see him go."

"No doubt." The doctor was not particularly interested. He had come back to this Timovian outpost to get a rest from aches and pains.

"I still can't figure that fellow out," the inn keeper went on. "Most remarkable guest I ever had. For instance, here's just one detail. Practically everyone who slips across from Troxia has some story about Gade Lasher—either knew him personally, or had a cousin who worked for him, or was once close enough to shoot him, or—you know. *You* didn't boast that way, but you're an exception."

"I've seen Lasher," the doctor muttered.

"Well, this fellow had the wildest story of all. He worried about Lasher, and tried to figure out his mind; and once in a burst of confidence he tried to tell me he *was* Lasher. And the way he looked and acted, you almost wanted to believe him. Trouble was, he was a fanatic on peace. Regular nut."

The doctor grunted. "Delusions of grandeur. He'd probably suffered too much persecution. Some cases are dangerous."

"Yes," Kaable said stoutly. "I felt that way about this one before he left. He'll be dangerous to Troxia."

Dr. Retterlic, unimpressed, turned the subject. "Have you heard rumors of the united front against Troxia?"

"Over the radio—yes. The great powers may pounce unexpectedly any day, they say."

"Ugly business," the doctor said. "Can't they see the green monster has stopped spreading of its own accord? Not a conquest all winter. Something's come over Gade Lasher. . . . I wish I knew —"

"Just a breathing spell for Troxia. Waiting for the dictator to rest up. Radio says he's still recovering from that assassination incident. He'll march all over us this spring. I hope the powers strike first, though we're in for a slaughter either way."

THE doctor's troubled gaze rested on the dim blue mists of the endless valley below. He lit his pipe, and let the match burn down to his fingers. Kaable played a doleful air on the bassoon before he resumed his observations.

"Lots of undertones that Gade Lasher went insane."

"Yes, I heard that," said Retterlic.

"He hasn't made a public appearance all winter. Some think he's run away, others say he's dead. Maybe murdered." Kaable saw the doctor grow tense with interest. "What's your guess, Doc?"

"Gade Lasher's done," said the doctor, puffing hard at his pipe. "I'm not guessing; I know. He's through. I can't tell you whether he died or went insane or skipped the country, but I'm certain he'll never whip the Troxians into a white heat again."

"Think he's burned out?"

"You might say so." The doctor caught the other's quizzical eyebrow. "Frankly, I think he was made the victim of a scientific trick by one of his doctors after that bullet grazed him last summer."

Knaable shook his head. "Hardly. His own doctors wouldn't have the nerve. Besides, they're all in this together. They're out to pillage the world, the whole rotten bunch of them!"

Retterlic swabbed his high head with a handkerchief, and replied. "Time will answer that. In my opinion, Troxia has begun to cool. If the pow-

ers will hold back a little while, they can save themselves a terrific war."

The inn keeper tooted a skeptical phrase on his bassoon. "Sounds nice, Doc, but the Troxian war machine is too big to cool. If Lasher fades out, watch that sleek general, Blegoff, take over the palace and set off the fireworks. He's the one you hear on the radio now."

Rising abruptly, the doctor asked to be shown his room. Kaable provided him with such accommodations as the house afforded, apologizing for his failure to have the rooms in better order. "Too much to think about," he explained. "Those odds and ends in the corner were left by that nut I spoke of. He sent clear to the United States for some of those electrical instruments, and then didn't bother to take them along when he left. Hope they won't be in your way."

When Retterlic arose, refreshed, the following morning, the "odds and ends" caught his interest. Beautiful compact electrical instruments. Scraps of messages in handwriting. Evidently one of these new devices for transmitting signatures and written messages by radio. He had seen the ads in foreign magazines, "Write by radio." Here it was, ready for service.

The two distinct styles of handwriting on the scraps of paper argued that the instruments received as well as transmitted —

Retterlic's pulse jumped. That handwriting was Doraine's! Yes, and Gade Lasher's! Unmistakably. He snatched up the papers. Official communications with the palace. Advice for staving off Blegoff and others. Replies to foreign powers. An occasional note of personal sentiment. The final transcript from the feminine hand read: "Do be careful, Gade. I wish you luck."

The doctor flew through his break-

fast and rejoined Kaable on the porch. "That nut—tell me more about him!"

CHAPTER VI

Human Fiber Is Tough

A HUGE question mark hung like fire in Retterlic's mind. Had Gade Lasher carried a pressure on the brain since war days? Did he lose his belligerence on the night that he traded a piece of skull for a silver instrument of torture? Gade Lasher's torture could have been no greater than that of Retterlic himself during these past months, sleepless with fear that he had brought ruin down upon a man who would normally be one of the greatest, noblest leaders of the age.

Bitter remorse stalked beside him wherever he went. He carried the trophy of that operation in his pocket, a lumpy, twice-scarred handful of bone, now well polished. If he could but bring himself to believe those nineteen years of Lasher venom were physically excusable, he would weep with joy—and then die of remorse for his crime.

Now he thrust his hand into his coat pocket as if to reexamine the famous Lasher head as he waited for Kaable's unaccountable story.

"He was a smallish person, middle aged, clean shaven, dressed in ordinary street clothes. He gave the impression from the way he marched up these stairs that he felt very important to himself. Probably a runaway army officer. He said he'd just been all over Troxia, through the prisons, along the Timovian front—everywhere—tracing a missing friend. A truck carried him past his next stop-off and he wandered up here by chance. Never knew when he crossed the line.

"He hungered for quiet, away from guns and planes and parades. Those

Troxian sky fleets that demonstrate on our side of the line every few days gave him an awful shudder. He was awful stirred up when I told him about a neighbor boy who shook his fist at a plane once too often; though the lad still has a chance to live."

"A bomb?" Retterlic asked.

"Sure—just for practice. Well, this nut dealt me some crisp bills, slept for a week, and acted as if he might stay forever. Everything went fine except when I played my bassoon. He couldn't stand it. Certain notes gave him shooting pains in the head. I didn't believe it until I saw him go sick a few times.

"I kept playing now and then until he threatened to leave. My wife and I couldn't afford to let him go. But on the other hand I *have* to play my bassoon. Couldn't get through a winter without it. So together we worked on him."

"Worked—how?"

"Encouraged him to get over his headaches. He wanted to bad enough, but he didn't think it was humanly possible. You see, he carried a metal plate in his head from a recent operation, and he'd discovered it vibrated to certain tones and gave him stabbing pains —"

"I understand perfectly," said Retterlic, impatient.

"He swore it would drive him crazy before long. Well, we didn't doubt it; as far as we could tell he was nearly there already. But we didn't waste any sympathy. 'Human fabric is tough,' I told him. 'Just keep practicing, like I do on my bassoon.' I thought he'd get angry sometimes, but he was so damned ambitious he never let down. And when my wife told him the trouble she had treating her deafness, he took heart. You see, when she first got that bone conduction instrument for her head the vibration drove her to distract-

tion. But after a few months —"

"Did this man actually get over his pains?" The great weight on the doctor's heart strained to lift.

"He spent the whole winter at it. For weeks he was deathly sick, and we thought to ourselves, now we've done it. Then he began to gain. He made me play for him regular. Soon he ordered some communication instruments from the United States, part of them for a friend back in Troxia. Between times he would hike out on mountain trails, rehearsing speeches. And say—how that man could speak! He could make chills creep down the backbone of a mountain!"

"What did he talk about?"

"His mission—to save the world from the evil hand of Gade Lasher. He was a natural born prophet of peace."

THE doctor's pipe fell from his teeth. "Hold on. You said he *was* Gade Lasher."

"He tried to tell me that once, but he didn't get far. I knew it was just a mental quirk. He usually referred to himself as the 'New Lasher.' He argued that the former Lasher was dead. But sometimes he would go off on other tangents. Once he said, 'Suppose by some miracle Lasher changed, and lost all his hate—would the people keep him for a leader and follow him back to peace?'"

"Well, would they?" The doctor appeared as anxious as the New Lasher had been.

"Not a chance. Like I told this fellow, any change in Lasher would just be on the surface. He wouldn't know how to be honest and decent, he's so saturated with lies and trickery. If Gade Lasher started waving a banner of peace, the Troxians would quit him cold and leave him out on a limb —"

The narrator rambled on, not notic-

ing that the doctor was lost in his own bitter thoughts. Retterlic had found the answer at last, perhaps, in the glib words of this peasant. The people would never believe in a changed Gade Lasher.

Still, perhaps *Gade Lasher* was dead. The New Lasher was a different person —so different that this peasant, who knew Gade Lasher's picture as well as his name, would not believe the two were one. If Lasher should continue this incognito—

"But he *did* recover from his head pains?" the eager doctor interposed.

"Yes. Miraculous, it seemed to us. But little by little, after hours and months of dogged work —"

Retterlic was on his feet. "When did he leave? Where did he go?"

"Well, about a month ago, right after he killed that Troxian soldier —"

"Killed? How'd that happen?"

"Just one of those night raids across our line. I had a tip that a neighbor, who lives seven miles down the mountainside, was in line for trouble one week, so I went down, and this New Lasher fellow went with me. One midnight they stormed in on us, four of them in green uniforms, and started crashing property right and left. We got the drop on them, and drove them off. But one of them whirled and took some pot shots, so this New Lasher picked him off. It so happened that his uniform was right for the New Lasher, who got into it and marched off at dawn without saying where he was going or why."

RETTERLIC hurried up to his room to the instruments. He found instructions, snapped the switches, began to write. In a few minutes the automatic marker swung with the swift, graceful motions of Doraine's hand.

An hour later, aglow with perspira-

tion, the doctor strode back to the porch, dressed for travel.

"I have confidential news direct from the Troxian government. Five world powers are going to blast Troxia off the map in just one week if she fails to meet their ultimatum."

Kaable cut his notes so short they forgot to echo. "Ulti— What?"

"They gave Lasher notice to return all stolen lands and pay certain indemnities or *else!*"

"Then Lasher *is* alive?"

"My message didn't say as to that, but there's one thing certain. Your recent guest, the New Lasher, is very much alive!"

"The government has heard of *him?* Already?" The bassoonist beamed.

"*Heard* of him! He's got the whole empire in a riot with his peace talk. The New Lasher!" There was reverence in the doctor's voice. "He's the hope of Troxia now. Everyone who hears him joins his white crusade for peace—"

"They'll never get him!" the inn keeper exulted. "Once they get in hearing range he'll convert them. I tell you his words go right through you like an electric handshake!" Old Kaable was so worked up he didn't notice that the doctor was taking leave. "Looks as if the Troxian dictator has a revolution on his hands. What do you think?"

"Figure it out for yourself," Retterlic retorted as he struck off up the trail. "I've got an official mission for Troxia."

He patted his coat pocket as he hurried along the path. Not a single bassoon note caught up with him.

CHAPTER VII

One More Purge

THE sleek, natty General Blegoff tugged at the ends of his antennae-

like mustache and glared at General Duboval, second in command. "We need one more purge." Blegoff hit his words savagely. "We've been duped long enough."

Duboval said nothing. He preferred to save his words until all ten members of the inner circle arrived. These secret meetings were perilous; they gave Blegoff the opportunity to purge on impulse.

"Duped!" the number one general repeated, "and by a damned female, at that!"

Duboval snapped on the radio, turned it to an international commentator who spoke from half a continent away.

"It is no secret," came the voice, "that the five powers comprising the United Front will loose their forces upon Troxia tomorrow noon, if their demands are not met by that hour. These nations deny that their action constitutes aggression. They insist that Troxia's cumulative offenses have driven them to this extreme. Until this belligerent empire is subdued there can be no security of life or peace of mind, nor any satisfactory business conditions.

"Hence, the world waits upon the brink of a precipice, beyond which may be catastrophe for civilization. Armies were on the move today.

"In the face of this crisis, the dramatic dictator of Troxia remains silent. He still does not show his face before his clamoring subjects, and they are growing suspicious that he may be dead.

"Meanwhile the White Crusade is gaining momentum every hour as the mysterious little man who calls himself the New Lasher challenges the Troxians with his peace program. Making scores of rousing speeches daily, he flies from city to city, and from hamlets to prisons to barracks, converting thou-

sands. Tomorrow noon, the very hour set for the United Front to strike, this spectacular White Crusade will march upon the dictator's palace to demand acceptance of the New Lasher's peace program.

"It is a crucial moment for Troxia, but General Blegoff's armies are reported to be ready on the Timovian border. Moreover it is believed that the inner governmental circle, meeting secretly, are planning to crush the White Crusade if it reaches the palace. It is a question whether the government will respect the centuries old custom of Troxia that no peaceful assembly before the ruler's palace shall be dispersed with violence.

"Thus far the secret police have utterly failed —"

"Snap that damned thing off!" Blegoff shouted. Someone obeyed.

The irate general turned on the group. "I tell you, we've been duped. Lasher's either dead or out of the country. And one smart female has held us at bay —"

"With the help of the Purple Guards," Duboval interrupted.

"But I *talk* with Lasher every day by television," someone protested.

"One smart female secretary," the general reiterated, "with talking films and some clever forgery—"

"Can you prove it?" Duboval challenged.

"I'll prove it aplenty!" the general snarled. "If we had the nerve to go through with one more purge, we'd see for ourselves. Instead we're at a standstill, just because she's a female."

"We've been too damned free with our power to purge," Duboval snapped. "Where's Lippen?" No one answered. "Where's Blotchup?"

"Coming," said Blegoff. "He got in past the Purple Guards finally, to squeeze some proofs out of the superin-

tendent of documents."

Blotchup arrived, threw a cardboard box on the table. "There's your evidence."

OUT of the box came scraps of film. The men snatched up the pieces, held them to the light, saw the bearded face of Gade Lasher.

Blotchup explained, "Lasher's speeches have been cut to hell. I've compared these scraps of sound track with the printed speeches. No question about it. Some smart technician has pulled out some sentences. Every time we shoot a question to Gade Lasher's confidential secretary, she touches a button that selects one of several stereotyped answers. Automatic movie instruments do the rest. We look on our televisor. Gade Lasher appears, roars an answer at us, and flashes off. That, my fellow simpletons, is how our dummy dictator has held the whip over us for the last —"

"One more purge!" Blegoff growled. "We'll draw lots to see who does it."

"Where's Lippen?" Duboval demanded. "We've no right to take action till Lippen comes."

Blotchup tossed his head toward General Blegoff. "The boss can answer that one."

A slap took the speaker across the mouth. Blegoff stood defiantly as the group of hard faces accused him; he drew back the hand that wielded a pistol as easily as it slapped. "All right," he snarled. "Lippen went soft and I let him have it. Got anything to say about it?"

"You're damned right!" Duboval shouted, starting toward him. "You've got no right to —"

Blegoff's pistol came up in a flash. Blotchup crashed into him. The bullet ripped through a framed canvas on the wall. Angry men piled into the fracas,

shouted down the hot tempers. This was no time for a shake-up; although every member of the inner circle realized that under the surface the dog fight for Lasher's place was already on.

Blegoff recovered himself with a touch of the mustache, and recaptured his advantage as spokesman. He abandoned the topic of purges. "Tomorrow noon the powers march on us. There's only one course for us worth considering. Beat them to the jump. With this proof—" he motioned to the mess of film—"that Lasher is out of the picture, we have every right to take action. I propose we advance at once—turn our planes loose this very hour—start our tanks across Timovia."

A wrangle followed. At length the group came around to Duboval's view, who reasoned: "The powers can't attack before tomorrow noon, but they can waste a lot of energy getting ready. We've got a first class revolution on our hands, due to break tomorrow noon. We've got to quell it. All right. Before the hour of twelve we'll radio the United Front that we're preparing to come to terms. That will hold them off and waste their momentum. We'll extinguish this rebellion of White Crusaders first. Then we'll be in a position to strike the powers without warning."

"Suppose our message does not reach them in time?" Blegoff objected.

"I'll see that it does," Duboval asserted.

"Never mind. I'll take that responsibility myself. However," the number one general struggled to regain the leadership that threatened to slip out of his hands, "the crusaders who march on the palace must not know the war has been postponed. Their fear that the United Front is marching will blast their peace talk to hell."

There was general agreement on this point. Further wrangle on details fol-

lowed. Duboval insisted that violence upon the crusaders would be unwise. It would only fan the flames. The right of Troxians to assemble before the palace had never been violated, even in this harsh regime of Gade Lasher. But General Blegoff had a plan that would quench the spirit of the peace rebels without violating the custom. The inner circle listened and accepted his plan. He gloated inwardly, sure that this clever non-violent strategy would win him the dictatorship. Then for one more purge: Doraine, Duboval, and the New Lasher.

AS SATURDAY dawned over the troubled continent, all Troxia trembled with roaring trains and trucks and planes, marching feet, shouting voices. Thousands of citizens sped toward the capitol, their white banners flying.

Doraine sat in her office from an early hour. She waited in vain for a word from her master. None came; neither did any communication come from her ambassador at large, Dr. Retterlic. Despair engulfed her. She had played her nerve-racking game day after day. Until now she had miraculously held off the official who demanded a face-to-face interview with Lasher. But now the illusion must burst. The deadline for answering the ultimatum was at hand. She could not answer it. Today Gade Lasher must crash.

There was still one thing she could do—send the Purple Guards forth to find the New Lasher, whose identity they did not suspect, to escort him safely to the portals of the palace. If the rumors were true—if the White Crusade marched upon the palace today—this safeguard for the New Lasher would be the last official act of the already mythical lord of war.

The girl spoke her orders to the



Blegoff's pistol came up like a flash

Purple Guards and they departed. That was all. She was now in the hands of the fates, and, should Blegoff seize the reins, she knew well enough what her fate would be. She reread for the hundredth time a few treasured notes in Gade Lasher's handwriting, buried her face in them, tried to cry, couldn't. He would go down in glory, championing the highest human cause; she would go down in ignominy, bearing the brunt of a cause she hated. All sentiment had gone out of her. She stared, glassy eyed, at the throngs of people moving over the scene beyond her window.

Far over the parade grounds that stretched before the palace portico they spread, a multicolored restless sea of humans. White banners waved, bands played, people sang and shouted for their champion.

The right to assemble peaceably before the palace! That was one right, thought Doraine, that even Gade Lasher in all his past brutality had forgotten to revoke. And now, transformed into a prophet of peace, he would have the benefit of his oversight.

Dust rose from below Doraine's window. The crowds began to move back. A clamor of agitation sounded, grew to an uproar of alarm. Soldiers marched down the palace steps in tight ranks, advanced slowly but steadily into the parade ground. The disorganized throngs moved backward and outward before the rhythmic tread of feet.

A stunt! Doraine saw through it at once. On they came, rank after rank. Blegoff's strategy, she knew. It was he who marched these troops through the palace to crowd the White Crusaders back. Technically Blegoff was not violating the tradition, for the soldiers used no bayonets, aimed no guns. They simply marched in tight formation, as if to add their numbers to the peaceable

assembly. There were a few shouts of "Stand your ground!" but no civilians stood.

WHEN the last regiment found its place, the mass of green uniforms filled a vast circle before the portico. To the amazement of the tightly packed thousands of White Crusaders outside this symmetrical forest of green, every soldier stood at attention, and every line of heads faced *outward!*

In the face of this trick, the New Lasher appeared on the portico, escorted by the Purple Guards, and began to speak. His audience was the irregular fringe of variegated color that extended beyond the circle of solid green. The uniformed men were to all intents not a part of the audience; they were simply an obstruction over which he must talk.

Fortunately, the loud speakers carried out to the corona of White Crusaders. They waved their white handkerchiefs as a salute, and called their applause over the heads of the soldiers who faced them. Thus the speech went forward.

"Today Troxia lives in the insanity of war. Who of you would not trade this madness for a rich, wholesome, normal life?"

Penetrating, vibrant notes went out over the amplifiers. The people listened, enthralled, as the marvellous peace program unfolded before them.

"I bring you hope of peace and prosperity which you have not known in years —"

Employees in the palace edged out onto portico to listen. Spaces around the columns filled with all manner of persons, from humble attendants to plotting members of the inner circle. Doraine found an obscure corner.

Every word entranced her. She could hardly believe this was the same

Gade Lasher. His closely cropped hair, clean-shaven face, crisp white suit altered his appearance radically. Even his voice was different. Powerful as it was before, it now carried a new depth and a penetrating ring beyond any voice she had ever heard. Words sang out like bells on a still night.

"You want a great Troxia! You cannot get it out of death and destruction! You must create wealth, not destroy it! You must build —"

The trenchant message searched to the core of every heart, awakened old forgotten longings with new hope. Here and there men in uniform strained to catch a glimpse of this fountain of power. They remembered they were human beings as well as soldiers.

The picture of Troxia, her needs, her potentialities, grew vivid before every listener. Officers, fascinated by this new perspective, forgot their charges and turned to face the speaker. Gradually the ranks were electrified by the speaker's irresistible dramatic power. They shifted positions to gape at the speaker in unconscious admiration.

"Now that I have described to you the program of industry and building and trade which will bring you security and the comforts of —"

Clunk! The amplifiers chopped off. To most of the listening thousands the white little figure of the New Lasher became only a silent pantomime, waving his arms in the air. An airplane bearing Troxian colors roared overhead.

A NEW voice sounded. "General Blegoff speaking." He had intended to order the troops to do an about-face. It was unnecessary. "You see me standing on the second level of the palace porch, directly above the speaker to whom you have been listening. I now give you the salute."

Thousands of habit-conditioned arms went up in response.

"I have an emergency message. It is twelve o'clock. At this very hour the United Front of enemy powers, jealous of the glories we have won, march upon us. To talk of peace now —"

The Troxian plane roared closer. Blegoff lifted his voice. "To talk of peace now is to invite death!"

Somewhere within the palace technicians of the Purple Guards worked frantically to splice freshly cut wires.

Blegoff roared, "I demand, in the name of Troxia —"

Unseen technicians succeeded. The New Lasher's voice rang out over the strident cry of the general. An incoherent jumble. Then a third voice boomed into the pandemonium, as it descended from an amplifier in the airplane overhead. The crowd roared its distress; the discord was complete.

But as the plane swooped lower, both Blegoff and Lasher stopped in surprise as they recognized the voice of the long lost Dr. Retterlic. All ears strained to the message out of the skies.

"Your ambassador-at-large —" the words came slow and clear—brings you the official report from the United Front. The world powers, impressed by the Troxian peace movement, have agreed to withdraw their ultimatum. Heads of nations will confirm this report by radio today."

General Blegoff went white with anger, backed away from his microphone as the mighty cheers rose from the multitude. The ground was cut from under his feet.

As the plane roared off, the New Lasher loosed his volcanic powers to demand that the Troxian government accept the peace program.

"But who is the Troxian government? *You* are! The empire must be ruled as *you* dictate. Do I hear you

ask, what of the iron hand of Gade Lasher? My people, let me answer the question you have been asking these many months. Gade Lasher, the lord of war, is no more!" A deathly silence held the multitude. "But before he departed this earth, he chose me, his namesake, who deplored his every act, to undo the mistakes he made. I have pledged myself to that responsibility!" A tremendous cheer. "With your support I shall take over the reins of Troxia this hour, and be your ruler until you choose to elect another. Do I have your support?"

The vast audience instantly became a sea of flashing white waves as the thousands gave the salute of peace. Soldiers and civilians alike waved handkerchiefs and gave their voice to the victorious tumult.

General Blegoff, now forgotten, looked down upon the scene. He had but one weapon left. He clutched it, aimed it at the little white figure below him. Then sharp pains cut through his chest—twice—and again. His handsome body crumpled. No one in the vast audience seemed to notice. Duboval's pistol was almost silent.

"The new regime can do without you," said Duboval.

LATE that night after the tumult and shouting had died, three guests still remained with the New Lasher in the dictator's historic study.

Dr. Retterlic and the transformed Lasher held their hand-clasp for some minutes.

"What a handicap I gave you!" the doctor said. "I never supposed you'd rise from under it. If you want it removed —"

"No," said Lasher. "Instead of breaking me, it made me—in more ways than one."

"But doesn't it ever pain you?"

"Like fire. But I've learned to endure it. And do you realize how valuable it is to my vocal equipment? It gives me a resonance I'll never part with."

The great weight over the doctor's heart lifted and vanished into thin air.

"But tell me, Retterlic," said the transformed dictator, "How'd you manage that miracle with the powers?"

"Mostly through good fortune," said Retterlic. "I found the heads of five nations meeting together, and my scientific connections lent support to my story. I pointed out the growth of the White Crusade as Troxia's new hope. Then I assured them that Gade Lasher's reign of hate was at an end. I proved my point with Exhibit A."

"Exhibit A?"

The doctor brought a polished slab of bone from his pocket. "There lies the hatred of the world in the palm of my hand. I think I'll go find a trophy case for this specimen. Good night."

"I must go, too," said the girl, following Retterlic to the door.

"I'll walk down the corridor with you," said the New Lasher. As they strolled he declared, "I'll never find words for the gratitude I owe you, Doraine."

"And you a master of oratory!" she chided. She was suddenly light-hearted, carefree.

Lasher smiled. "An orator must support his words with appropriate gestures—the use of his arms —"

They paused in the alcove before Doraine's door. Lasher's arms lent themselves to the use most appropriate to the devotion that welled from his heart, the words that poured from his lips. In eager embrace the New Lasher discovered a new and very lovely Doraine—and a human emotion the old Lasher never knew.

mesotron. He figured that where positrons lurked, there might be some cousins still further removed. So he found mesotrons. The clue was an irritating mysterious error that always seemed to effect certain calculations about cosmic rays. What good are mesotrons? Once more the scientists shrug their shoulders. "We discover 'em," they say. "Let the technicians find a use for 'em!" So maybe we'll use mesotrons to boil eggs, or blow up cities, or maybe to run automobiles. We'll know in fifty years or so.

But with two more "particles" the scientists aren't satisfied. They suspect strongly that there are two more. They've named them "neutrinos" and "neutrettos." And again, the technicians are given more raw materials to work scientific and mechanical marvels for future civilization. Four scientists, four new "particles"; mighty mites that will certainly remake the world we know today.

All four are Nobel prize winners, incidentally, just in case you doubt the importance of these new discoveries.

WHEN we began using cartoons in *Amazing Stories*, we didn't dream the readers would like them so well. But humor definitely is well-received, and we rather like the idea of having once again scooped the field in presenting something science fiction hasn't seen before.

EVEN among scientists the fisherman's lament is sometimes heard: "You should have seen the one that got away!"

Late last year, in deep water off the coast of South Africa, a fish was caught that in itself was remarkable enough. A husky, five-foot brute belonging to a species hitherto found only as a fossil—and believed to have been extinct for fifty million years!

Soon after, however, another ("much bigger!") was reported—but before it could be landed, "got away . . ."

EXPERIMENTS in Europe, have taken away one of the more comforting popular beliefs. Coffee will *not* sober you up after drinking!

In the United States, however, a good word has been put in for coffee.

Fifty people were set to adding interminable columns of six-digit numbers. Half of them were given two grains of caffeine each, about the equivalent of a cup of coffee. The others, unfortified, became bored and slowed up in their work. But

the coffee drinkers—or caffeine eaters—reeled off their arithmetic at a steady and rapid rate!

Why didn't we know about this when we were back in school . . . ?"

A FEW ways to increase your span of life: Eat sparingly when young, switch to a normal diet upon maturing. This way—barring accidents—you can live to be a hundred!

Or, if you prefer, you can have the whole thing done for you by blood transfusions! They will supply the body cells with the best nutrition at all times. *This way offers from 125 to 150 years!*

But you can save yourself all that trouble—and live still longer! *Just drink fermented milk.*

180 is guaranteed that way—if you don't get tired of sour milk. . . .

THE wonders of science never cease. Now odors have been made visible!

A thin film of talcum powder particles floats on mercury in an open tray. Over it is placed a

glass plate, with a flower petal stuck to its lower side. Slowly the talc particles begin to move, form a pattern! *The pattern representing that particular flower's fragrance.*

"Odor particles" have been radiated by the flower petal. Too small to be seen themselves by any known means, they have imprinted their design on the film of talc. Striking the membranes of our noses instead, they would cause us to smell the particular odor thus identified visually.



Ha! Pointed—See!

HERE, fresh from the laboratory, is a warning for the season that is coming! *Do you daydream?* If, with the first breath of spring, your fancy turns to thoughts of lovely damsels, or if your mind strays to rippling brooks where fish leap in the sun—beware you don't die of asphyxiation! That's exaggerating somewhat the recently discovered physiological effects of daydreaming, but it is actually true that in those pleasant springtime reveries we literally forget to breathe! For as long as seven seconds at a time! Thus we deprive our system of life-giving oxygen. Like high-altitude flyers, we then suffer from anoxemia, feel not only romantic—but groggy!

And while the breathing pauses are individually perhaps not so long, take a good old-fashioned daydreamer such as the recent experiments turned up, and you'll find him holding his breath thirty seconds out of every minute!

LEGION of the

BY FREDERIC ARNOLD KUMMER, JR.

The Earth officials living on Mars were getting along fine—until the horrible Martian zombies decided to revolt and drive the Earthmen from their planet. Then there was hell to pay . . . !

CHAPTER I The Walking Dead

HIS EXCELLENCY, John Winship, Governor-General of Mars, drummed nervous fingers upon the window-sill of his private office in the Administration Building, as he watched a streamlined Canal Patrol boat with its crew of earth-born police dart along the leaden surface of the Han Canal. Four men to patrol an area occupied by ten thousand Martians! A hundred thousand terrestrials administering an entire planet, half a billion souls! He had warned the Supreme Council of Earth that an uprising would mean the end of earthly rule, perhaps an invasion of Terra itself. Had begged for more men, more rocket ships . . . and the Supreme Council had radioed him a verbose epistle on economy and colonial administration.

A click of a door interrupted the Governor-General's turbulent thoughts. He spun around with more than dignified haste, his hand dropping to the cyanide gun at his waist, only to grin sheepishly at sight of Marburg, his meek-faced secretary.

"Well?" Winship snapped. "What now?"

"From Psidis, sir." Marburg ex-

tended a yellow radiogram. A . . . another assassination, I'm afraid. Deputy-inspector Allers."

"Allers!" Winship muttered. "But . . . Good God! I was talking with him by television only this morning. How . . ."

"The same as the others, sir." The secretary shook a doleful head. "The murderer walked right through a hail of bullets, shot Allers, then leaped into a canal. And there's been more propaganda broadcast to the people, sir, telling them that you're next, urging revolt."

"Revolt!" Winship tugged savagely at his gray moustache. "Lord! That's thanks for restoring order, building roads, canals, giving them the best of Earth's civilization! It would be different if we were harsh, tyrannical, but when we bend over backwards to be . . ."

"Beg pardon, sir," Warburg interrupted timidly, "but there's a man waiting to see you. From Interplanetary Intelligence's headquarters back on earth. Says it's urgent."

"Hmm." The Governor-General moved uneasily, thinking of Allers. "Sure he's all he claims to be?"

"His prints check, sir," the secretary



A ghastly, dripping figure stood on the window sill

murmured. "Will you see him?"

"Right." Winship ensconced himself behind a massive steel desk, watched his secretary leave the room.

A moment later Marburg returned, accompanied by a lean, bronzed man in an immaculate *cellotal* suit.

"Mr. Ranson," the secretary announced, closing the door behind him.

The Governor-General studied his guest closely, noting the sleek fulvous hair, the clearly-defined features, the keen blue eyes. The man's youth was something of a surprise to him; his Excellency had anticipated the usual I. P. I. representative, suave, gray, perhaps a trifle pompous. This young man looked more like a rocket-ship pilot, or a two-fisted spaceman.

"Governor Winship?" The Intelligence agent sank, unbidden, into a chair. "I'm Ranson . . . Gregory Ranson . . . from Terrestrial Headquarters. The Supreme Council sent me out to investigate these murders. As I understand it, certain fanatical Martians have been killing off our top officials in hopes of inciting a revolt. Right?"

Winship nodded gloomily.

"Seven in the last month," he said. "Allers of the Psidian District makes eight. I'm next, I understand."

"We'll try to see that you aren't." Ranson studied the Governor-General's stern face. "Who do you think's behind the assassinations?"

"Might be anyone." Winship shrugged. "There's Kurlec, a half-crazy fanatic, supposedly hiding somewhere in the city. Or Dr. Elath Taen who left the Medical Center some years ago vowing vengeance on all terrestrials. Then there're rumors of a beautiful Martian woman. . . . But what good're guesses in a city of over a million? Gifford, one of my best agents has been covering all these leads for the past two weeks and so far found nothing!"

The man from Interplanetary Intelligence nodded.

"I'm interested in how the murderers get by the guards," he said reflectively. "Why the cyanide bullets don't stop them. . . ."

FROM the outer office came the sound of Marburg's voice raised in high protest, then deeper tones, hoarse, excited. Gregory Ranson arose in one swift silken movement, his hand in his coat pocket. Winship gnawed at his moustache, very pale.

Suddenly the outer door burst open, and a disheveled, wild-eyed man lurched into the room, blood streaming from a ragged wound in his arm.

"Good God!" Winship gasped. "It's . . . Gifford!"

"Your . . . your Excellency!" The man staggered toward the desk. "Found . . . found out who's behind murders! They're after me! The canal . . ." he swayed, gasping.

Ranson, his lean, tanned face harsh, sprang to the man's side.

"Who?" he snapped. "Who's after you? Quick!"

Gifford's voice rose in a horrified, tortured scream.

"The Dead!" he cried. "The Walking Dead! Good God! *He* sends them to walk . . . walk . . ." Gifford's words died away in an unintelligible mutter; abruptly his knees jack-knifed and he toppled to the floor.

"Fainted." Ranson, kneeling beside the inert form, hastily bound up the jagged wound. "Loss of blood! The sooner we bring him to, the sooner we know what he's found! Can you get a doctor?"

"Yes. Yes, of course." Winship moved toward the door. "I'll send someone at once."

Left alone in the big office, Ranson commenced an examination of the un-

conscious man. His pockets revealed only some change . . . four Martian one-thael pieces, a card identifying him as a special investigator of the Governor-General's, the thin filter-masks carried by all inhabitants of the red planet in case of sudden choking sand-storms, and a small greenish brooch-like object which at first puzzled Ranson. Then, all at once he realized what it was . . . one of the little ornaments, *hatils*, in the vernacular, which the slim, sleek Martian women wore in their hair.

Ranson was just holding the green pin up to the light when he heard it . . . a bumping, scraping sound, as though something big, clumsy, were being dragged into the room. With a light, feline movement, surprising in so tall a man, the Interplanetary agent leaped to one side, whirled, heavy cyanide gun in hand. His eyes, bleak as a lunar landscape, flicked toward the window . . . and a gasp escaped his lips.

STANDING upon the window sill, shadowy in the purple twilight, was a stiff, erect figure, motionless. A Martian, grotesque, hideous, he was wringing wet, his sparse hair plastered down upon his bulging pale forehead, his ragged clothing clinging to a powerful, muscular frame. A small, glittering disc, perhaps an inch in diameter, hung upon his breast; a short copper shock-stick, ready to impart its deadly electrical charge, was thrust into his belt.

"Good God!" Ranson could not repress a shudder at sight of this macabre figure. Then, raising his gun, "Don't move or I'll shoot!"

The man in the window *was* moving, however. Awkwardly, very stiffly, he climbed down into the room; his head and body were rigid, only his arms and legs seemed capable of motion. Robot-like, staring eyes fixed on the opposite wall, the Martian walked jerkily across

the room.

"Stop where you are!" Ranson cried. "Or . . ." He ended the sentence by squeezing the trigger of his gun.

The hiss of the pistol was like the sound of a giant snake. The clumsy figure of the assassin did not halt. Ranson swore, fired again. Still the hulking Martian came on, heading toward the inert Gifford.

A species of panic gripped Ranson. In desperation he fired the remaining four shots at the intruder . . . then choked back a cry of horror! Upon the waxy forehead of the stiffly-moving figure were six round black holes where the six deadly cyanide bullets had entered, piercing his brain, spilling their terrible acid! Six lethal charges, each taking effect . . . and the blank-faced Martian strode heavily on!

Not six feet from him the expressionless Martian halted over the limp form of Gifford, the copper shock-stick in his hand. With the fumbling movements of a sleep-walker the man pressed the contact switch, sending an aura of blue luminescence along the twelve-inch piece of copper. Very deliberately he bent to touch Gifford's face.

"No! You can't!" Blindly Ranson drew back the empty gun, hurled it at his opponent. With a sickening crunch it struck the man's temple, yet the shock-stick continued downward in an arc of death.

At that instant the door of the office burst open. Winship, followed by half a dozen terrestrial guardsmen, sprang into the room.

"Ranson!" he cried. "Marburg said he heard shooting . . . Great God!" He stared wide-eyed, at the grisly, expressionless Martian.

A hissing of cyanide guns sounded, as the guards fired.

"Don't shoot!" Ranson cried. "It's no use! Jump him!"

IN RESPONSE the men leaped toward the grim solitary figure. For just a moment he stood motionless, shock-stick raised, then with one mighty bound sprang up to the wide window-ledge, leaped downward. Ranson ran to the casement in time to see an ungainly figure strike the surface of the canal with a cloud of spray, disappear beneath the muddy, puce-colored water. Crowds of guards, passersby ran toward the canal embankment. For almost five minutes Greg stared at the water, then, as no head broke its surface, turned to the room once more.

"What . . . what happened? Who was that man?" Governor Winship's bushy brows met in a straight gray line.

"Sorry, he didn't leave his name," Ranson observed dryly. "He only stayed long enough to complete the murder of poor Gifford!"

"Gifford! Murdered!" His Excellency's face grew ashen. "Then we'll never know who . . . And you call yourself an Intelligence agent! Couldn't you have shot this . . . this monstrosity, killed him before he reached Gifford?"

"Killed him?" Ranson exclaimed. "How could I kill him? Governor Winship, the man who murdered Gifford was already dead!"

CHAPTER II

Kidnaped

THE strip of embankment that lay between the Administration Building and the Han Canal was gloomy, cloaked in sombre shadow. High above the twin moons peered like two baleful eyes from the heavens, giving an air of mystery to the scene. The waters of the canal were dark, a deep sherry hue, for in this, the month of Zac, the annual flood from the melting polar caps

had swept down, bringing sediment, dust from the desert.

Ranson gazed moodily. What had happened to the killer after his leap into the canal? He had not come to the surface, according to the spectators who crowded the embankment, nor had the dredges of the police boats located his body.

Ranson wondered. Suppose Gifford's words about "the Walking Dead" had been merely delirium . . . suppose the six bullets he fired had missed their mark, and the dark spots on the murderer's forehead had been merely dirt-smears? Perhaps his imagination had gotten the better of him. No sane man could believe in the Undead. And yet . . .

Suddenly Ranson heard footsteps behind him . . . soft, light footsteps! He spun, staring into the gloom. A slender figure, clad in shimmering white, stood as though frozen a few paces away . . . a woman's figure!

FROM the distant Space-Port a rocket-ship leaped skyward, the ruddy flare of its exhausts momentarily illuminating the embankment. In the swift flash of light Ranson could see a sleek, exquisitely formed body, a vivid face with scarlet lips, bottomless black eyes, and copper-colored hair wound tiara-fashion about her head. She might, Ranson thought, have been an earth-girl, had it not been for the coral tint of her skin, the small size of her hands and feet, which spoke of Martian blood. Was this the owner of the green *hatil* he had found in Gifford's pocket, he wondered. Could she be the power behind this plot to overthrow terrestrial rule?

The girl was near, now! the close-up of her strange, exotic beauty brought a rush of blood to Ranson's throat.

"Please pardon me." She spoke with

a trace of an accent. "I . . . I was to have met someone here, on the embankment. A . . . friend." Color rose to her cheeks. "As I passed that clump of bushes, there I saw something . . . something horrible. A man. Dead. With six holes in his forehead . . ." The girl's voice broke. "What should I do? Call the terrestrial police or . . . or what?"

"A dead man!" Ranson followed the girl's gaze to a big clump of bushes on the water's edge. A dead man with six bullet holes in his head! Could the murderer have in some way eluded the searchers, crawled into the shrubbery to die? "Come along?" he said. "Let's have a look!"

The girl nodded, her face drawn as though in dread, accompanied him along the bank. Upon reaching the clump of foliage, Ranson saw a sprawling shape lying beneath the bush.

"See!" The girl pointed with a gasp of horror.

Ranson fell to his knees, turned the body over. It was cold, stiff, unquestionably lifeless. No mistaking that ghastly countenance; this was the man who had killed Gifford. And an examination of the body might reveal . . .

"Ah!" The girl behind him drew a sharp breath.

At that instant the limp form was seized with terrible convulsive life. Two icy hands clamped about Ranson's throat, bore him backward with superhuman strength. As he struggled vainly to break that fierce grip, the girl, her face an impassive mask, stepped forward, a small glittering object in her hand. She bent, quickly, and Ranson felt the sharp pain of a needle thrust into his arm.

Whether the drug or the grip upon his throat, the terrestrial could not tell, but a moment later all strength seemed to have been drained from his body.

Weakly he fell back into the shadows.

Through gray mists he saw the girl reach into the thicket, draw forth two queer glass helmets, slip one over her head. Cautiously she peered from the mass of foliage, glancing up and down the canal. The waterway was deserted at this late hour; far upstream a patrolboat purred, but it would be at least five minutes before it reached them. Now Ranson felt the girl and her terrible companion slip the second helmet over his head, drag his numb body toward the bank. Then he was falling . . . falling . . . through wet blackness, until his feet touched the slimy mud of the canal bottom.

Dazed, Ranson glanced about, peering through the dark water. On one side of him stood the girl, her loose robes pressed by the current against her body, her head shielded, like his own, by a glass helmet. At his other side was the big, blank-faced Martian; no helmet covered his head, he seemed oblivious of the water. Greg stared at him, bewildered, swayed as the patrolboat roared over their heads, swirling the water of the canal. For just a moment Ranson was conscious of the girl's deep eyes fixed upon him expectantly, then the drug she had injected into his arm took effect. One fleeting memory, he had, of being dragged along by the robot-like Martian before the darkness of the canal bottom merged with an even greater darkness inside his brain.

CHAPTER III

The Undead

IT was light . . . a glaring, dazzling light . . . that broke through the shadows, summoned Gregory Ranson back to consciousness. Slowly, painfully, he drew himself into a sitting position, realizing as he did so that his

hands and feet were bound. Suddenly he was aware of someone speaking, in crisp, sibilant Martian.

"Tomorrow the new day of Mars dawns! Be ready!"

Ranson shook himself, glanced about. He was in a very large, brilliantly-illuminated room; its windowless walls were beaded with sweat, as though below ground. At one end of the room rose a mass of coils, tubes, and condensers, apparently a radio transmitter. In the center of this array of apparatus were what appeared to be six separate television screens; beneath them he could make out a complicated series of levers, an instrument that resembled the keyboard of some vast typewriter.

At the other end of the room were half a dozen tall doors, not unlike lockers. Near them sat the dark-eyed girl, her brooding gaze fixed upon the earthman, her expression enigmatic. Then the sibilant voice spoke again.

"Repeating our message to the people of Mars! At the ninth hour tomorrow night the signal for the revolt will be given! Winship, the terrestrial Governor, will speak at the opening of the new Jerala canal! He will be killed upon commencing his address! This proof of our power will be the sign for the uprising! Let no earthling escape with his life! Then, with their ships and arms, we attack Terra! Remember, no quarter for the earthling . . .!"

"No!" Ranson whirled about, faced the man who, behind him, was speaking into a transmitter. "It's a lie! The earth has brought new life to old Mars! We . . ."

Hastily the man at the radio snapped off the controls.

"Hardly polite to interrupt me," he said softly. "Besides being quite useless! I have been broadcasting the message at intervals for the past twelve

hours!"

Ranson studied the speaker. The man was a Martian, ruddy-skinned, deep-chested, with a bulging hairless head. He was dressed in a stained white smock which, along with his stooped shoulders, gave him the appearance of a scientist . . . an appearance somewhat belied by the huge, powerful muscles of his arms.

It was the man's face, however, that held Ranson's attention. Suave, bland, there was nevertheless something inexpressibly evil about the opalescent eyes, the thin lips, the protruding cheekbones. As he stood there, the play of light and shadow across his features made him seem somehow diabolical, satanic.

"**A**LLOW me to introduce myself. I am Dr. Elath Taen, and this" he motioned toward the girl, "is my daughter, Zeila."

Ranson smiled, without humor.

"Your daughter and I have already met," he said. "Perhaps you'll explain why she had me brought here."

"A compliment to you, Mr. Ranson." The Martian nodded gravely. "I feared you! You were the first to realize that my servants were not exactly . . . alive. To be sure, that stupid Winship laughed at you, yet I was worried lest others might take heed, upset my plans. Then, too, we saw, through our servant's eyes, that you had found the green ornament which Zeila so carelessly lost and which might have been traced. Hence your . . . what is the terrestrial word . . . ah, yes . . . kidnapping!"

"Then I was right!" Ranson's eyes narrowed. "The man who killed Gifford was dead when he climbed through the window! But how on earth . . ."

"How on Mars," Dr. Taen corrected with a sardonic chuckle. "Seriously, though, Mr. Ranson, have you ever con-

sidered the qualifications necessary for a political assassin? I considered them at length when I decided to remove the leaders of the terrestrial administration, to free Mars!" A smouldering fanatical flame leaped in his eyes. "Bravery is paramount, since such attempts are usually suicidal. Superhuman strength, endurance, are necessary to carry a man through the fire of guards to his goal. And lastly, if captured, he must not talk."

"You'd need a robot for all that," Ranson observed dryly.

"Exactly." The doctor nodded. "Except that a true robot would be a huge mechanical contrivance, cluttered up with apparatus, easily recognized, and easily put out of commission. For my purposes, useless. But consider the perfection of the human body. Dead, it tells no tales, knows no fear."

Ranson stared uncomprehendingly at the Martian's mocking face.

"Even the organs of a dead man must be injured, eaten away, by cyanide bullets."

"Only if he has organs, Mr. Ranson!" The doctor rubbed his hands eagerly. "Only if he has organs! Zeila, show the earthman Number Four!"

Ranson watched the girl move toward the row of lockers and his muscles tensed. What nameless horror, he wondered, lay behind the door?

With a clang it swung open. Ranson leaned forward, staring. A shallow recess, tile-lined, was visible in the light of the room. Standing stiffly erect in the niche was the figure of a man, pale beneath his reddish skin, eyes staring straight ahead.

"Number Four," Dr. Taen purred. "A very excellent specimen! See!" Turning, he bent over the mass of apparatus at the other end of the room. At once a high-pitched drone arose, moving parts began to whirl. Sparks

danced between copper terminals, tubes glowed, a smell of ozone filled the air. Suddenly Ranson choked back a cry. The corpse was moving!*

Stiffly, robot-like, the grim figure stepped from the locker, took four steps forward, came to a halt.

"So." The Martian scientist turned from his keyboard. "You see one of my instruments of death! I have made the dead live again! A fluid, the product of long research, takes the place of blood in their veins, preserving the tissues, and yet preventing the rigidity of death. Superfluous organs all are removed. I needed only muscle, bone and nerves. Let bullets pass through the body, the head! So long as they do not cut the nerves of the legs, arms, and spine, my puppets go on! Look!" He ripped open the shirt across Number Four's back.

Set into the livid flesh was a square flat box. "There is my secret! A tiny battery, giving off electrical impulses similar to those sent out by the brain! Impulses which enter the nerve center of the spinal column, command the muscles to move, act! Here . . ." he touched the glittering disc that hung about the figure's neck . . . "is an electric eye, a miniature television set! With it I can watch the movements of my servants." The Martian pointed to the six television screens on the wall. "Watch where they go, direct them by

* What makes the hand close? A small electrical impulse, traveling from the brain along the nerves, causes the muscles to contract. And when we die the brain can no longer send forth its impulses, the muscles cannot move. But take a dead animal, a rat, let us say, and pass a strong current through his body. The animal will twitch, kick violently, since the current has the same effect as the brain impulse. If deterioration of the flesh could be stopped, an artificially induced current of the correct voltage led into various nerves, that rodent could be made to perform numerous physical feats. Thus, it isn't beyond possibility that dead men could be electrically controlled.—Ed.

short wave, just as ships, planes, can be guided by radio! My special wavelength . . . 6.1284 meters . . . is free from commercial interference! Observe Number Four!"

Dr. Taen spun about, pressed a lever on the big keyboard. The dead man responded by raising his hand in a stiff salute. Another lever, and Number Four took a step to the right.

"You see?" The scientist laughed softly. "I am the puppet-master! It takes long practice to control six of my servants at once! Tomorrow, I send out my human robots to kill Governor

General Winship! They know no fear, are silent if captured, and are all but invulnerable since the guards will fire at their heads, their bodies! With Winship out of the way, we Martians rise, slay, take over the planet! The pale spawn of Terra will be destroyed, earth itself invaded, subjugated! Every man we lose will be reanimated like this one here, sent back into the battle; We cannot fail!" Elath Taen paused, his expression terrifying in its exultation.

RANSON'S gaze swept the room. The man was mad, he felt sure. Terrestrial rule, peace, had been the greatest boons ever to be given Mars. Yet the war-like people were restless, eager for the anarchy of the past. The murder of Winship would be certain to start a general uprising. Unless he, Ranson, could somehow render the doctor's zombies useless.

With a sudden leap Greg sprang from the table, lurched clumsily toward the mass of apparatus. If he could hurl his body into the array of fragile tubes and wires, smash them! Taen, Zeila, at the other end of the room, could not reach him in time. One more hop of his bound legs.

From the corner of his eye Greg saw the doctor press a button of the key-

board, saw the hulking figure of Number Four jump between him and his goal. A second later, cold, clammy fingers gripped his arms, held him helpless.

"Ha!" Elath Taen's repulsive face was twisted in a sardonic grin. "You appreciate the efficiency of my puppets? Soon you also will become one of the company of the living dead. As an earthman you should make an excellent spy to send ahead prior to our invasion of Terra."

He opened a door, revealing a dark passage. "At the end of this tunnel we have a small cell in which our subjects are kept prior to their . . . transformation. Number Four will take you there!"

Greg saw the doctor touch a lever, felt himself lifted by the human robot. One glimpse of Taen's mocking countenance, of Zeila's sphinx-like features, and he was swallowed up in the darkness of the tunnel.

CHAPTER IV

An Attempt to Escape

THE little cell was dark, shrouded in velvet shadows. Ranson paced back and forth, restlessly, his face drawn in haggard lines. The events of the past twenty-four hours flashed in kaleidoscopic pictures through his brain. The Living Dead! Silent, sure, invulnerable . . . walking along the floor of the canals to their destination, passing through a hail of bullets, slaying. . . .

A flash of light, a jingle of keys in the corridor outside interrupted Ranson's tangled thoughts. A slim, sleek figure stood before the cell. It was Zeila.

"I see you have freed your hands," she murmured.

"Right." Ranson glanced down at

his chafed wrists. "Clumsy knots! I wish the door of this cell were as easy to unfasten!"

The girl's dark eyes studied his lean, clean-cut features.

"Useless," she said. "Even if you were to escape from the cell, the main doors of this cavern are secure. We are bound to win. Within a half-hour our servants go out to kill Winship. By dawn you will be the only earthman alive on Mars! Yet you may have . . . a chance."

Ranson clutched the bars of the door; light from the girl's lamp gleamed upon his big gold wrist-watch.

"A chance?" he repeated.

Zeila moved closer, an exotic, seductive figure.

"Tomorrow we will be triumphant," she exclaimed. "There will be no chance of your escape. Join us, give us all your information concerning I. P. I., the defenses of Terra, and you will be spared the transformation into one of our puppets! Look at me, Gregory Ranson! There is terrestrial blood in my veins. . . . I am no ugly Martian woman! Soon my father will be the most powerful man in the solar system, and those near to him will share his power! Will you have death in a lost cause, or life, position . . . and love?"

"Love?" Ranson's voice broke. "Zeila! I . . . I . . ."

"You are pleased?" The girl moved nearer the cell door, her vivid lips parted in an eager smile. "I will teach you to hate . . . hate all other terrestrials! Mars will be our slaves, the slaves of Mars!"

Ranson held the girl's eyes as she spoke. Slowly, imperceptibly his fingers crept toward the watch on his left wrist. All at once he twisted the stem. A yellowish cloud, gas kept under pressure within the big watch, jetted out, enveloping the girl's head.

STEPPING backward, Ranson watched Zeila open her mouth to scream, and in doing inhale the deadly vapor. Like magic the girl's beauty vanished; eyes gleaming with hate, face contorted, hideous in its rage, she glared at Ranson. Then, as the swift-acting gas took effect, she toppled to the floor.

"So," the terrestrial chuckled softly, "I.P.I. still has a few tricks unknown to Mars!" Dropping to his knees, he reached through the bars, took the ring of keys from the girl's belt. A moment later the door was open.

Hastily Ranson bound Zeila with his discarded bonds, stuffed a handkerchief into her mouth, locked her in the cell. After a short wait to allow the gas to dissipate, he set out along the passageway. The door at the end of it was ajar; cautiously Ranson peered through. Elath Taen's laboratory was deserted, gloomy in the light of a single lamp. Noiselessly Ranson entered it.

Ranson tried the outer door, found it securely locked. Nor would any of the keys he had taken from Zeila open it. The girl had been right in saying that escape from the cell would mean nothing. There was no way of reaching the surface, no way to warn the other terrestrials. Even the power supply of the broadcasting unit was, he found, cut off by some hidden switch.

Face tense, Ranson picked up a heavy hammer from a workbench, approached the short-wave set by which the human robots were controlled. To smash it, he knew, meant only a delay in Winship's assassination; Taen would be able to build a new unit in time, might even have a spare set on hand. Yet under the circumstances this was the best he could do. Grimly Ranson raised the hammer.

It was just about to fall when the I.P.I. man checked himself. A plan had taken shape in his mind . . . a wild,

desperate plan, yet if successful it would mean escape from this underground devils-workshop, enable him not only to warn Winship but to bring the terrestrial forces to capture the Martian scientist. Hastily he dropped the hammer, turned to the row of lockers, opened one at random.

The grisly occupant of locker number one was tall, of spare build. A long loose *shala*, or dust-robe, hung upon his stiff, erect figure, its cowl concealing the pallid ghastly face. With swift nervous fingers Ranson lifted the dead man from his niche, stripped him of robe, hood, and the electric eye that swung about his neck. Then, binding the icy limbs securely together to prevent their obeying the commands of the doctor, he carried the rigid form along the passageway, placed it in the cell beside the inert Zeila.

Ranson had just returned to the laboratory when he heard a mutter of voices from behind the outer door that led to the city above. Frantically he donned the long robe and hood, hung the electric eye disc into place. As the lock of the outer door grated, he stepped into the tile-lined locker, closed it.

NOR had Ranson been a moment too soon. Hardly had he drawn shut the locker door when Elath Taen, accompanied by a squat, bulge-eyed Martian entered the room. Both men were wringing wet, wore glass air-helmets.

"And now, Hanno"...the doctor removed his helmet, changed his dripping *shala* for a dry one that hung on the wall... "all is in readiness. Five more minutes and I send my servants to their task."

"Good." The other man murmured. "Our people are waiting! They need only this token of your power! If you carry out your plan, they will rise! But if you fail. . . ."

"I will not fail!" Taen said grimly. "Open the lockers!"

Heart pounding, Ranson froze into immobility. A moment later he heard the squeak of hinges, saw the door open. Before him lay the laboratory, shrouded in thick shadow; at its far end stood Elath Taen, a wild-eyed demoniacal figure, bent over the mass of apparatus. One glance he cast at the grim shapes in the niches, then laughed.

"Think, Hanno," he muttered. "The dead shall bring death to Winship! And his fall is a signal for the fall of terrestrial domination! I, the puppet-master, shall rule Mars!"

As he spoke his spatulate fingers ran lightly over the keys of the control board. Slowly, stiffly, six figures stepped down to the floor. Ranson, arms at his sides, body rigid, followed the movements of the grotesque shapes beside him. Suddenly Taen's companion spoke.

"You've forgotten to give them guns! How can they kill . . ."

"Fool!" the doctor exclaimed contemptuously. "Water would ruin the weapons! One of my men will place guns in their hands when they reach the spot!" Again he touched the keyboard, and the machinery hummed.

Ranson's heart sank. Water! It meant nothing to these human robots, but if he were forced to follow some submarine tunnel. . . Too late to stop, now. Taen and his companion were well-armed. All at once he was aware of the figure in front of him moving with heavy, clumsy strides. Automatically he followed suit, marching along in the file of living dead.

Through the doorway the six plodding shapes passed, and along a corridor. Taen's voice, the lights of the laboratory, died out behind them. Suddenly Ranson stiffened. His feet had touched water!

Downward the passage slanted. The water was rising as they pushed on, reaching knees, hips, armpits. Oblivious, the grim human robots stalked onward. Waves lapped against their necks, their chins. . . . Ranson drew a deep breath. To return meant death. . . . Brushing by the ungainly figure in front of him, he commenced to swim.

NO chance for air, now. The water reached the roof of the tunnel. Weighed down by the heavy robe, exhausted by the strain of the past two days, Ranson swam desperately on. His lungs were bursting, spots of fire danced before his eyes. And still the stone roof of the tunnel met his upthrust hands!

At last, when it seemed that the passage had no end, Ranson felt himself shooting upward. A moment later his head broke water, his lungs gulped in the thin cool air. Dazed, he dragged himself to the canal bank, lay there, panting. He was, he noticed, on a little-used waterway, its sides lined with dark warehouses, grain elevators. A smell of spices, of aromatic Venusian tobacco, of Jovian *kava*, mingled with the stench of the canal.

Ranson arose, exultant. By now the five living robots were marching along the canal-bottom, toward the new Jerala branch where Winship was to make his address. He had only to follow the waterway until he met a patrol boat or a monorail station, notify the authorities. . . .

Suddenly Ranson's gaze fell upon the glittering disc, the electric eye which he had hung about his neck to complete his disguise as one of the zombies. Through it Elath Taen could watch the actions of each of his puppets on the six television screens above the control board. Already it must have told him that one of them had failed to obey his orders, was an independent living entity.

Even now, as he stared at the disc, Taen could see his face, recognize him. . . .

Hastily Ranson tore the electric eye from about his neck, hurled it into the canal. The time lost as he had lain on the embankment recovering his breath had, however, been fatal. Elath Taen had already acted. As Ranson tossed the damning disc into the dark water, a livid, bony hand broke the surface, shot upward to clamp about his ankle, sought to drag him down. In desperation Ranson leaped backward, yet only succeeded in pulling his antagonist to the bank. No mistaking the terrible figure, now, it was Number Two, the corpse whose place he had taken. Taen had unbound him, sent him out in pursuit!

As he and his opponent rolled to the ground Ranson instinctively lashed out a rain of blows . . . blows that made no impression upon the cold sodden flesh. Then he remembered . . . the human robot could feel no pain! Desperately he shifted his tactics, sought to hurl the terrible figure back, but the zombie's strength was more than human. A broad hand clamped down on Ranson's face, covering his nose, his mouth. In vain the terrestrial's feet punished his opponent's body; ribs cracked, flesh tore, but the grip did not relax.

Fighting for breath, Ranson reached around, smashed his fist against the copper oblong on his opponent's back. Once, twice, then, as the black mists engulfed him, a third time. With the last blow something gave . . . wires snapped, delicate mechanism crumpled. Very faintly, as though eons away, Ranson heard a police boat's siren and then he knew no more.

CHAPTER V

Revolt of the Zombies

RANSON opened his eyes to behold a lean grey man in the uniform of

the Terrestrial Police standing before him. Several others were ranged along the wall of the big, white-walled room.

"He's awake," the grey man murmured. Then, to Ranson, "One of our canal boats picked you up. You've been unconscious nearly an hour. What's it all about? Who's this man?" He pointed to the stiff, inert figure of the zombie.

Ranson shook the cobwebs from his brain, dragged himself erect.

"Quick!" he muttered. "Plot to kill Governor . . . You've got to act now, at once!"

One of the men in the background laughed.

"Quite convincing for a canal rat!" he chuckled. "Eh, Captain Maxwell?"

Ranson lurched across the room, pressed his muddy fingers upon a sheet of paper that lay on the desk.

"Here!" he said, handing it to the grey man. "Check these prints with number 132-A of your I. P. I. file! Hurry!"

"What? Interplanetary Intelligence? Wait here!" Captain Maxwell left the room. When he returned, a masked change was noticeable in his manner.

"Sorry, Mr. Ranson," he murmured. "I didn't realize . . ."

"Skip it!" Ranson snapped. "Governor Winship has got to be warned! As soon as he opens his address, he's to be shot! And his death is the signal for an uprising that will cost the life of every terrestrial on Mars!"

"Winship . . . uprising. . . good God!" Captain Maxwell sprang across the room, snapped on the big television set against the wall. As he adjusted the dial, a vivid scene came to life on the screen. A Martian plain, flat, bare, arid, through the center of which ran a broad, white canal, devoid of water; at the end of the canal were massive locks holding back the torrent which was soon

to gush into the empty waterway.

A huge crowd surrounded the locks, red-skinned men, Martians, silent, tense, as though waiting. Upon a raised dais, surrounded by a circle of heavily-armed guards, sat Winship, and several terrestrial dignitaries. At the microphone stood a heavy-set, pompous man, laboring through a verbose introduction.

Captain Maxwell shook his head.

"No chance," he muttered. "Warnings wouldn't help, now, even if we could contact them. They're trapped, surrounded! Try to escape and they're doomed! God! There've been rumors all day of a secret broadcast urging the Martians to revolt, but we didn't realize . . ." He turned to one of the men beside him. "Order all rocket planes out at once! Hurry!"

"Useless." Ranson shook his head. "Fifteen minutes at least to get the planes out of their hangars, fueled, and in the air! Another ten before they reach the plain! Call it half an hour. By that time . . ." staring at the television screen. Five figures, walking in unison, were pushing their way through the crowd, heading toward the speaker's platform . . . five stiff awkward figures, their faces concealed by their loose dust-robies!

Suddenly Ranson's gaze fell upon the short wave radio set at the other end of the big room; its operator was droning instructions to the captains of the canal patrol boats.

"Captain Maxwell!" Ranson exclaimed. "There's one chance . . . one crazy, desperate chance of saving the Governor, saving the lives of the terrestrials on Mars! I want all your technical staff here. At once! We've got to work fast!"

THE plain before the Jerala lock was ghostly in the light of the bril-

liant searchlights. The crowds of Martians were silent, their green bulbous eyes glittering coldly as they waited. Governor Winship moved restlessly as the fat man at the mike indulged in flights of rhetoric. "A man who . . . and who . . ."

The Governor-General frowned. All that day he had heard rumors of attempts at his assassination, a general revolt, yet only by appearing here boldly, braving the threats, could he hope to hold his power. A single indication of weakness, of cowardice, would mean the end of terrestrial prestige. And that prestige must be maintained until Mars was able to carry on by herself as a united vigorous nation.

Still the introductory speaker ground on, interminably. Winship thought of the death of Allers, of Gifford, the ghastly intruder of his office. If he could only discover the power behind these killers. . . . All at once he was aware of a voice saying, "I have the honor of presenting His Excellency, the Governor-General of Mars!"

Winship arose, pale, but firm and deliberate in his actions. An excited mutter ran through the crowds of rust-colored men; they moved closer to the speaker's platform, like a great tidal wave about to engulf the small group of terrestrials. For a long moment Winship stood erect in the light of the *astralux* arcs, eyes sweeping the sullen, silent throngs. Suddenly he caught sight of five stiff figures in the front row of the crowd; they stood like statues, arms at their sides, eyes fixed unseeingly ahead. Cold sweat broke out upon Winship's forehead. Those figures, so like the one which had slain Gifford. . . .

The Governor fancied he could see Martians, in every town, every village of Mars, clustered about television screens, waiting the signal to revolt.

His death would send them surging into the streets, to kill, massacre, the unsuspecting terrestrials. The end of earth's dominance of the solar system! Yet he had to go on, bluff his way through, and hope . . .

WINSHIP began to speak, his voice echoing with a strength he did not, could not, feel.

"People of Mars!" he began. "We are gathered here to . . ." Winship's voice broke. The five figures were moving, in strange unison, toward the terrestrial guards that ringed the platform!

A silence unbelievable in so vast a crowd hung over the plain. Then the guards, cyanide guns in hand, were shouting warnings to the grim, advancing figures. With a single gesture, five bony hands slid beneath robes, reappeared clutching guns. Still there was no sound from the thousands of waiting Martians.

A sharp order rang from the captain of the terrestrial guards, and a deadly hissing of guns arose. Still the five figures approached the platform!

A second volley rang out from the Governor's guards. The first two of the zombies were riddled with bullets, their heads only unrecognizable pulps, yet they matched unhurriedly on, guns spitting death. Panic seized the terrestrials; casting aside their useless weapons, they cringed to the ground.

Upon the platform Governor Winship stood frozen before the microphone. Martians, impassive, motionless, ringed the speaker's dais, making escape impossible. The five terrible figures were mounting the steps of the platform, moving heavily, inexorably toward him. The Governor stared at them in awed fascination. They were corpses, moving cadavers; he could see that. Ranson, the I.P.I. man, had been right

Perhaps if he, Winship, had not been so bitterly skeptical . . .

The five nightmare creatures, torn to masses of flesh and bone by the bullets, were facing him. Slowly their hands, clutching cyanide guns, swung up. Winship folded his arms. Better to die like a man than leap from the platform, be torn to bits by the mob. The cyanide bullets were quick, merciful . . .

A sibilant hiss ran through the crowd, murmurs rose. "Death to the terrestrials! Strike, men of Mars! Strike!"

Five leprous hands, gripping guns, pointed toward Winship. The ghastly faces were blank. Now . . .

Suddenly a cry of wonder, of despair, echoed across the plain. The Governor gasped, stared. The grisly figures seemed suddenly to have gone mad! Leaping, cavorting clumsily, they danced about the platform, their bony arms flapping, their feet shuffling in a wild macabre dance! Now they were kicking grotesquely, writhing, making wild disjointed gestures! Awkward, ragged spectres, they whirled like dervishes! Some had dropped their guns, others, their fingers jerking convulsively, sent bullets plunging at the sky, or into the crowd. A wailing cry went up from the plain. "Elath Taen has failed! He has turned against us! The armies from the grave he promised us are useless!"

Winship was shouting orders, and the panicky guards took new courage. Up the steps they raced, sprang upon the mad, dancing figures, lashed them securely. Hardly had this been done when a dozen points of light appeared in the sky. Rocket planes, their bomb racks full, swept down to circle the plain like menacing ravens, the flare of their exhausts casting a lurid glow over the Martian throngs. Shoulders squared, the Governor stepped up to the microphone.

"People of Mars!" he began. "We are gathered here to dedicate a new link in the canal system, a link that is the product of terrestrial enterprise and energy and which we hope will be of great benefit to our brothers of Mars. Together, these two great planets . . ."

THE office in the Administration Building was bright in the morning sunlight. His Excellency, the Governor, peered from beneath shaggy gray brows at the tall man opposite him.

"You have seen my radiogram to I.P.I. headquarters, Mr. Ranson," he said gravely. "I want also to extend my personal apologies . . ."

"Forget it!" Gregory Ranson grinned. "Don't blame you for thinking me nuts! I find it hard to believe in living corpses myself!"

"Horrible!" The Governor shuddered. "I still don't see how you were able to stop them!"

"Simple." Ranson shrugged. "Taen told me he was directing their movements by short wave on a length of 6.1285 meters. With the help of the technicians under Captain Maxwell we shifted the wavelength of the police broadcasting unit from its regular 10 meters to Dr. Taen's band. Easy enough with variable condensers, a series hook-up. Our messages 'jammed' the air, garbled his broadcast, and made those poor human robots go wild. My only regret is that Elath Taen escaped. I suppose when he found his zombies out of control, he knew we were on to his game, skipped. By the time we got diving helmets, located the underwater entrance, he and his daughter had left, taking all notes and equipment."

"Don't worry about Taen!" The Governor laughed. "His own people are convinced he betrayed them! He won't dare show his face on Mars for some time!"

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MISSING: Millions in Radium

BY ROBERT MOORE WILLIAMS

CHAPTER I Watch That Man

"SO you're the new technician," Drundel said, not offering to shake hands.

"Right," Steve Porter answered. He laid on the desk in front of Drundel the letter of introduction from the home office.

Drundel shoved it to one side without glancing at it. His hard brown eyes were fixed on the face of the man who stood before him. His gaze was challenging, measuring. Steve knew he was being sized up, weighed. He did not let his eyes falter under the manager's gaze, but he felt his temper start to warm up.

"Well," said Drundel abruptly, still studying him. "We'll get along all right, if you can remember just two

things. The first thing is," he rapped out the words, "that I'm boss down here."

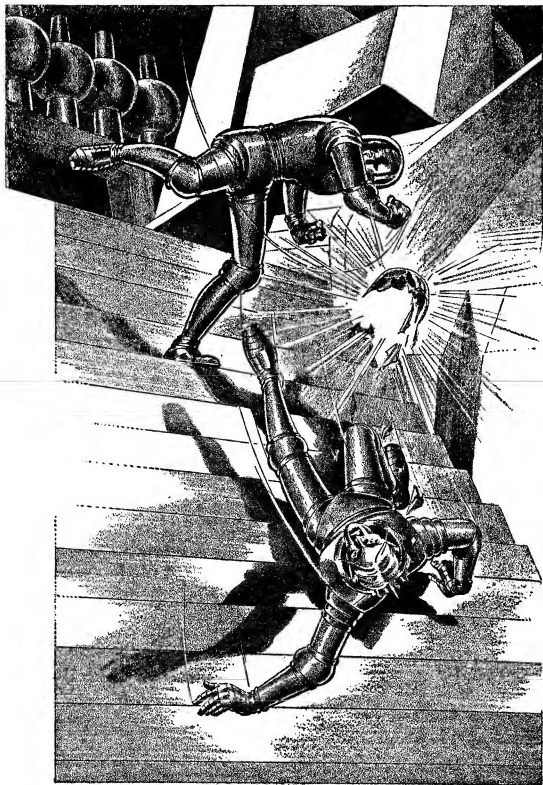
"I have no intention of challenging your authority." Steve answered quietly enough in spite of the fact that the words sent his temper climbing to the danger point.

"Good. The second thing you want to remember is this: Don't try to teach me how to run this business, or at least don't do it until you've been here long enough to learn something about it yourself!"

Steve's head jerked up. "I—" he began.

"You're probably like all the rest of these college boys. Because you studied it in some damned school, you think you know everything there is to be known about the Treadwell process of extract-

**The Treadwell plant wasn't
producing the usual amount of radium.
Was it being stolen? Steve Porter went
into grim danger to discover the truth.**



Steve's blow shattered the glass of Smucker's helmet

ing minerals from sea water. But I've yet to see one of you who knew enough to come in out of the rain."

Steve's temper boiled over. "I was going to say, when you interrupted, that I wasn't down here to teach you your business, but to learn something myself. However, from what the office told me, you can use somebody to teach you how to operate this plant."

Drundel rose from his chair. The red lines of anger grooved his face.

"What's that?"

Steve could have bitten his tongue off. But it was too late. He might as well go ahead now.

"As I understand the situation, this plant hasn't showed a profit in two years, because, while your production of calcium chloride, sodium chloride, potassium chloride, and magnesium sulphate has held up, your production of radium has dropped fifty per cent. And unless radium is produced, this plant will not be able to meet its maturing bonds, in which case the bondholders will demand an accounting and a receivership. When it's all over, the plant that Luther Treadwell spent his life developing will be in the hands of his competitor, the Amalgamated Extraction Company."

"Oh!" said Drundel. Satisfaction, disgust, and violent anger marched across his face in succeeding waves. Steve could understand the anger. He had jabbed Drundel in what must be an exceedingly sore spot. But why should Drundel show satisfaction? Why should he seem to be secretly pleased? Then Drundel's face showed only violent rage, and for a moment Steve thought the manager was going to start throwing his fists. Steve tensed himself and the hard muscles he had acquired through four years of college boxing grooved themselves into iron bands all over his body.

But Drundel changed his mind. He didn't use his fists.

"No doubt, Mr. Porter," he said, cutting scorn in his voice, "you will be able to solve the mystery of the missing radium."

"I didn't say that."

Drundel ignored him. He punched a button on his desk.

"Mr. Smucker, my assistant, will show you to your quarters and your duties. You will be permitted to go to the mainland two evenings a week, but before you leave this island you will be carefully searched to make certain you are not conveying radium to the mainland. This regulation applies to everyone. Of course the home office advised you that, during your employment here, you will be virtually a prisoner."

Prisoner! The word had an ominous sound. The way Drundel said it, it sounded ominous indeed.

"THIS," said Smucker, opening a lead-sheathed door, "is the radium extraction department. The whole room is lined with lead, to confine the radiations. Before we go in, we will have to put on special suits of lead armor."

Steve grunted. He knew the deadliness of radium. The terrific burns resulting from the exposure of the human body to radium emanations had caused the death of many workers in the early days. But this was 1984. Today every school boy knew how deadly radium was.

Smucker led the way to another door. It opened into a small chamber made of stone blocks, as was most of this plant. Hanging on the wall were five bulky outfits that looked like diving suits.

Smucker slipped into his suit with surprising speed. Steve was slower.

Smucker helped him adjust the helmet with its lens of lead-impregnated glass. Steve was glad when the helmet closed down over his face. He saw that Smucker was watching him, weighing him, just as Drundel had weighed and measured him. And he had a hunch he would need the helmet to hide his feelings when he entered the radium extraction department. He was right.

There was little noise in this department, the soft sighing of moving waters, the distant hiss of steam, the vast boiling of seething chemicals. There were only four men in the section, hooded armored figures that glanced at them and continued with their duties, like grim gray robots too busy tending their own particular inferno to waste any time in conversation.

The extraction of radium was the last step in the process. The waters that came boiling in at one end of the long low room had already given up their metals, their gold and silver, their hoard of aluminum and magnesium, their chlorides and their sulphates. They had given up their iron and copper too, but these were not worth much. It was the radium that really counted up, that made the whole process commercially profitable.*

Or had made it profitable in the past. But now—now the process that had been the life work of Luther Tread-

well—was failing!

Steve was glad he had the hood over his face, for without it he could not have concealed his feelings. It seemed to him that the ghost of Luther Treadwell was in this room. In the soft muted hiss of the steam, in the boiling of the chemicals, in the vague sighing of running waters, he could hear Luther Treadwell saying: "I designed all this. I gave my life to developing this process. I made it work. . . . But now it's failing. It's going wrong, somewhere. And it's up to you, Steve, to find out where. It's up to you to make this plant operate, to make it work. Do you understand, Steve—"

"I understand," Steve answered. He spoke the words aloud.

"What's that?" Smucker asked.

"Eh?" Steve was startled. "Nothing—"

Through the lens of the helmet he could see Smucker eyeing him. Smucker started to say something, but a bell rang sharply. He turned and looked toward the door where they had entered.

DRUNDEL had followed them. He was peering around the leaden door and was beckoning to Smucker.

"That was a call bell," Smucker said. "Wait for me. I'll return as soon as I find what Mr. Drundel wants."

He went out, slamming the heavy door behind him. It didn't catch properly. Steve heard what Drundel said. The manager's words scared him more than he had ever been scared in all his life.

"Watch that man," said Drundel. "He's a detective."

"A detective!" There was sudden, inexplicable fear in Smucker's voice.

"He's either a detective or a spy, I don't know which. When he came in, I thought he didn't look right, so I let him know who was boss down here;

* It is a well known fact that the sea contains mineral and chemical wealth far in excess of any of the dreams of any miner in the earth. Through countless ages the sea has been collecting, in solution, and in finely divided particles, the various minerals and chemicals from the land, washed into its waters by the constant falling of rain, and the gouging of rivers. There are ways of extracting some of these things at present, but the process is so vastly more expensive than the value of materials extracted, that its operation is valueless. However, it seems certain that in the near future, materially cheaper methods of extracting these substances from sea water will be discovered. When this happens, mining on land will become a minor means of securing minerals and chemicals.—Ed.

I was trying to open him up. He opened up all right, the damned fool. In cracking wise, he betrayed too much inside information about this plant to be what he claims, a technician fresh out of college."

"But if he's a detective, who sent him?"

"The office is so badly worried about our drop in radium production that they may have sent him to check up on us. On the other hand, he might be a spy sent by Amalgamated either to see if we have any new wrinkles they can use, or to sabotage our plant, or both."

Drundel was in a seething fury. He was worried, too.

"Why don't you fire him?" Smucker queried nervously. "Why take chances?"

"You don't fire guys like that," Drundel rasped. "You kick 'em into the chemical vats and run 'em through the plant, and if anything is left after that, you feed it to the fishes."

When Smucker came back into the room, Steve was in the far end watching a workman test the temperature of the incoming water. His face was a complete blank, but inside he was a seething turmoil.

Smucker said nothing. But his silence carried a threat of deadly danger.

Steve sensed there was danger here on this island off the coast of South Carolina. But he did not sense that death was dogging his footsteps all over the plant that Luther Treadwell had built. He did not realize how deadly was the game in which he was taking a hand.

CHAPTER II

Death

THE hidden death that dogged his footsteps wasted no time. It struck

savagely, without warning.

Steve left his quarters and went for a walk the first night he was on the island. It was about a mile in circumference. He strolled around it and came to the channel through which the sea water was taken into the plant. The channel was about fifteen yards wide and perhaps twenty feet deep. There was an inch-mesh screen at the entrance, to keep out the fish caught in the flood, and at the lower end there was a water gate, to close off the flow. A single flaring light showed that the gate was open.

The sea poured through the channel in a racing, roaring, howling flood. It was faster than a mill race and it ended in the chemical vats of the plant.

Steve leaned over the guard rail, staring at the water racing five feet below him. Moaning, it rolled in a sullen flood. The moan sent little shivers through him. He visioned the fate of anyone who fell into the racing waters. It would be curtains, for no man could swim against the current.

He did not see the dark figure crouching behind him, the figure that had followed him all around the island. He did not know there was another person near him until the sudden whisper of rubber soled shoes racing across concrete whirled him around.

He caught a glimpse of the man, but only a glimpse. He flung up a protecting hand. A piece of lead pipe smashed through his guard, crashed against his head.

The night exploded in a burst of flaming light.

Vaguely he knew he was falling. He hit with a loud splash and the moaning waters of the race closed over him, whirled him over and over as they hurled him toward the dark opening of the plant.

Fortunately, he was unconscious only

a few seconds. The chill of the water brought him back to life. Gulping, choking, he forced himself to the surface. Coughing, spitting water, he sucked at the air.

"Slugged!" he thought. "Tossed into the intake channel!" Drundel's words came back to him. "You kick 'em into the chemical vats and run 'em through the plant!"

Drundel! The manager had slipped up behind him, slugged him, and shoved him over the guard rail. Drundel had tried to murder him. Tried! The growing roar of the plant toward which the racing flood was carrying him told him that the odds were a hundred to one that Drundel had succeeded.

DESPERATELY he turned, breasted the current, tried to swim against it. A dozen overhand strokes gained him nothing. He swam harder. And did not gain an inch. Instead he lost ground. The current caught him, whirled him around, flung him nearer to the plant. The roar grew louder.

He quit trying to fight the current, swam instead to the edge of the channel, hoping to find a projection to cling to. He groaned when his grasping fingers met smooth, slimy concrete. If the wall had been greased it would not have been any slicker. And the roar of the plant was nearer.

Death was minutes away, less than minutes. He could not swim against the current, he could not cling to the walls. He could only ride with the water down toward the vats of the Treadwell Extraction Company plant.

Wild thoughts flashed through his mind. Scream for help. Screaming would do no good. There was no one to hear him. The crew inside the plant could not hear his cries. The men off duty were in their quarters at the other end of the island.

If he were going to escape, it would have to be on his own efforts. But how? How? How? The word was a screaming torture in his mind. How? The plant was closer. He was being carried toward it with express train speed.

He saw something that sent a wild surge of hope through his heart. A chain was stretched across the channel directly under the single flaring light that marked the opening to the plant. A chain! It was used in closing the water gate and it was at least three feet above the surface of the water. Maybe four feet. If he could reach it—

It was his only hope. If, by swimming with the current and gaining as much speed as he could, he might leap upward far enough to reach that chain with one hand—

If! The alternative sickened him. If he failed, if he didn't reach the chain, if his straining fingers touched it and slipped off—Ten feet beyond the chain the water howled as it passed into a dark hole. It went directly into the steam room where its temperature was raising to the boiling point. If he missed the chain, he went directly into the huge tubes of the boiler room. As he drowned, he would be boiled. The boiling wouldn't matter so much. He would drown first.

And his leap had to be perfectly timed. You only got one chance, in this game.

The chain was directly ahead of him. It was now or never. He swam as fast as he could, hurled one hand upward.

HIS fingers caught and he sobbed in relief. They slipped almost as soon as they caught. He kicked against the water, mad desperation giving him strength. His fingers held. He got two hands on the chain, hooked an elbow

over it. For two minutes he clung there. The water sucked and tugged at him as if it were reluctant to release its victim. His strength came back. Hand over hand he went along the chain, pulled himself over the wall, and collapsed face down on the concrete. He lay there, fighting exhaustion, fighting for breath, fighting the turmoil in his brain which kept repeating a single word: "Drundel! Drundel! Damn Drundel! The cowardly, sneaking—"

He raised up, looked across the channel. He had emerged on the opposite side from which he had been catapulted. He looked but he didn't see Drundel. He didn't see anyone.

His first thought was to go face Drundel, to accuse the manager of attempted murder. On second thought he saw that this was senseless. Drundel, thinking he had gone into the vats, would no doubt be shocked and surprised to see him. But Drundel was a cool customer. He would not let his amazement betray him. And if Steve accused the manager of throwing him into the channel, Drundel would laugh at him. If Steve went to the law on the mainland, the law would ask for proof. And he had no proof. He hadn't recognized the man who struck him.

Why had he been struck, why had he been attacked? Why should Drundel, or anyone else, try to kill him? Murder was dangerous business. Only a desperate man would resort to murder. Or a badly scared man.

Why should anyone in this plant be desperate? Or be badly scared, so badly that he resorted to murder as an out? Was his attacker scared to death of a detective? If so, why?

The thought jarred Steve to his feet. There could be only one answer: radium! The radium production of this plant had dropped to half what it had been. He had thought that the extrac-

tion process had slipped a gear somewhere, that the radium was not being efficiently extracted from the water.

But what if the plant still produced as much radium as formerly? What if half of the radium was being stolen?

Steve's face set in grim, hard lines. The attack on him had revealed one thing: there was a thief on this island, a thief who had stolen huge sums from the company, a thief who was so badly scared by the appearance of a detective that he resorted to murder. There was no other logical conclusion to be drawn from the attempt to murder him. A thief, a badly scared thief who was afraid that a detective would uncover his depredations, had tried to kill him.

Who was it? Was it Drundel? Was it Smucker? Or was it someone else, one of the hundreds employed daily in the plant?

And how was the radium being stolen? The radium salts extracted from the water, dropped automatically into a locked, lead-lined receptacle, and were weighed automatically. A complete record of the production was kept. So many grams of radium were produced every month. The scales registered the production. In the home office he had seen both production and sales records. They matched perfectly. Every gram of radium that was produced was accounted for in sales.

How was the radium being stolen?

Who was stealing it?

Grimly Steve walked around the plant, headed for his quarters. He had a job on his hands, a job that he now knew could easily result in his death.

As he approached his quarters he came face to face with Drundel. The manager stopped, stared at Steve with open mouth.

Steve halted. Should he denounce Drundel, force a showdown?

"How in the hell did you get all wet?"

Drundel snapped. "Did you fall in the ocean?"

"No," said Steve bitterly. "I got caught out in a rain."

"A rain?" Drundel looked at the sky. The stars twinkled in the blue vault over head. There was no sign of a storm. "Are you crazy?"

"You told me," said Steve grimly, "that I didn't have enough sense to come in out of the rain. You were right. I got caught out in the biggest flood on this island."

He brushed past the manager. He knew that Drundel watched him as he walked away.

He had decided not to denounce Drundel. First, he had to find how the radium was being stolen. That was vital. The future of the Treadwell Extraction Company depended on his locating that leak. If he failed, the company would fail with him. For reasons of his own, he did not want that company to fail. The success of that company was as important to him as his own life.

He walked into his rooms, unlocked and opened his bags. He took out a compact, spring-actuated pistol. He wound the spring tight, loaded the magazine with needle-like projectiles the pistol fired. The needles were coated with an anaesthetic that produced unconsciousness within less than a minute.

He jerked off his clothes, strapped a shoulder holster directly to his body.

"All right, Mr. Killer," he said to himself. "The next time you try, you had better not fail."

CHAPTER III

The Stolen Hoard

"OH!" Steve thought. He thrust the tiny cell, which glowed when rays

from radium fell on it and was used to check the equipment for possible leaks, into the pouch of his suit of lead armor. He had been using the cell, as part of his duties, in the radium extraction department. But he had seen something that made him forget all about the cell, something that sent a sudden thrust of sharp tension through his body.

Three weeks had passed, three weeks of hard work. Steve had not minded that the work was hard. It was fascinatingly interesting. But the constantly growing tension was getting on his nerves, the eternal watchfulness that he knew was the price he was paying for his life. He had not relaxed his alertness for a second. Somewhere smouldering eyes were watching him, waiting for him to drop his guard. He had not located the killer. Worst of all, he had not found even a hint as to how the radium was being stolen—until now!

Smucker, clad in a suit of armor, had entered the radium department. He had unlocked the receptacle into which the radium salts, as they were extracted from the water, fell. He looked at the delicate balance which automatically weighed the salts to see if a gram had been produced.

"Not quite," Smucker said. "Some-time tonight, probably, the gram will be produced."

Steve didn't say anything. He was too excited to say anything. He had seen something that set him on fire. On one end of the balance was a slowly growing pile of radium crystals. On the other end was a tiny weight.

Steve had just come out of a college laboratory where he had used standard weights. He had become so familiar with them that he could recognize them almost at a glance.

And this weight on the balance, it didn't look quite right. It looked a lit-

tle big. Perhaps just the tiniest fraction, but in dealing with chemical balances that could weigh a pencil mark on a piece of paper, the tiniest fraction counted.

The thought jarred him like the blow of a fist! What if that weight which was supposed to be a standard gram, was in reality two grams? What if the person who was stealing the radium had substituted a heavier weight for the standard gram that was supposed to be on the balance?

HE SAW what would happen. As measured against the false weight, the radium production would seem to drop, suddenly. Really the production would not have changed, but a false weight on that balance would seemingly cause a production drop, a sudden drop.

For a minute, Steve's hopes flared, then died. He was wrong about that weight, had to be wrong. The production had dropped slowly. Of course, if the thief had changed the weights over a period of months, if he had substituted a series of false weights, gradually increasing their size, the effect would be that of slowly dropping production.

But even that would not work, Steve saw. When the radium was delivered for sale, it was weighed. The balances of the buyer would instantly catch the difference. The production records and the sales records matched perfectly. Therefore all the radium that was produced was sold, and therefore this weight was a standard gram.

Logically he was wrong about the weight, logically he had to be wrong. His eyes had fooled him. He could not expect to detect with his eyes the difference between one gram and two grams.

He sighed. Then another idea sent his heart pounding again.

Suppose the thief, after the radium

were weighed on this false weight, removed half of the production before it was offered for sale? What then?

Then the production records and the sales records would balance perfectly, the effect would be that of lowered production, and exactly half of the radium produced in this plant would have been stolen right under the nose of the management!

The thought set him on fire. The thefts could be worked that way! But how to prove it?

He could go to the mainland, secure a standard gram, and surreptitiously check it against the gram used on this balance. That would tell the story, instantly. That would prove whether or not the radium was being stolen by a clever substitution of false weights. It would not prove who was doing the stealing, it would not reveal the identity of the thief.

"Who," Steve said, "besides yourself, has a key to this receptacle?"

"I don't have a key," Smucker answered.

The brazen statement was stunning. "You have a key in your hand right now," Steve challenged.

"This is Mr. Drundel's key," Smucker answered smoothly. "He is the only person who has one. He gave it to me to check the production and I have to return it to him."

Drundel! He had the only key to this box. That meant only one thing.

"Who removes the radium from the balance?" Steve demanded.

This would clinch everything.

"I do," Smucker answered. "We handle it only in quantities of an even gram. When a gram has been produced, I inform Mr. Drundel, get the key from him, remove the radium, seal it in lead, and turn it over to Mr. Drundel, who places it in his safe until it is shipped. Is there anything else you

would like to know?"

Smucker's words were sharp with suspicion.

"No," Steve snapped. "I think I know everything I need."

"Good," said Smucker. He locked the receptacle, turned and walked up the room.

STEVE was momentarily at a loss, not because of Smucker's obvious suspicions—he had almost grown accustomed to being watched by Smucker—but by the assistant manager's statement that he, instead of Drundel, removed the radium from the balance. Was it possible that Smucker was the thief? Steve dismissed that as impossible. The assistant manager had a sneaking manner about him, but he didn't look like he had enough guts to be a thief. Drundel did. And the radium was stored in Drundel's safe, giving him a perfect opportunity, in the privacy of his own office and at his leisure, to remove half the radium from its lead containers.

Drundel, damn him, was the thief. But first that had to be proved. First, the weight on the balance had to be checked.

When he stalked out of the room, Steve knew exactly what he was going to do: go to the mainland and secure a standard gram weight. He was so engrossed with his own thoughts that he forgot the tiny radium radiation sensitive cell that he had thrust into the pouch of his armor. Those cells were supposed to be left in that department. Orders were strict on that point. The cells were expensive and were easily broken, and if the technicians carelessly carried them off, the result would be just another item added to the already overburdened expense accounts.

He did not remember the cell until he was in the room where the protective

suits were kept and had started to remove his armor. Then he felt it bulging in the pouch.

"Damn it," he muttered. "Now I'll have . . ." He pulled the cell out of the pouch. His muttered words died on his lips. He felt gooseflesh rising all over his body.

The cell was glowing. Not with a dim light, indicating the presence of a minute quantity of radium, but brilliantly, brighter than he had ever seen a cell glow before.

For a second, he did not grasp the significance of the glowing cell. It meant there was radium here in this room, but so what? Then the meaning was partly brought home to him. There was radium somewhere in the room. But there wasn't supposed to be any of that extremely valuable mineral here. If there was radium here, it was radium stolen from the plant of the Treadwell Extraction Company.

He jerked the hood down over his face, held the glowing cell in his glove-protected hand, began moving around the room. He located the region of greatest intensity, the place where the light from the cell was strongest. It was close to the floor and in the far corner.

"What the hell?" he thought. "Radium here? That's impossible!"

WAS the cell lying? Had its delicate structure been damaged? He examined it closely. If there was anything wrong with it, the defect was not visible to the naked eye. And it was certainly indicating that there was radium hidden in that corner of the room.

But where? He rapped against the stone blocks. One of them gave back a hollow sound that sent his blood pounding feverishly through his veins. He pushed against the block. It did not move. It seemed firmly fixed in place.

He pushed against one end. The block did not move. He pushed against the other end. And the whole block swung neatly on a hinge, revealing that a hole had been hollowed out in the center.

In that hole there was a tiny, but obviously exact, chemical balance of the type used for extremely delicate weight measurements. But it was not the balance that sent Steve's breath whistling through his nostrils in incredible, shocked amazement. It was that pile of white glittering salts hidden in the hole. Radium! Gram upon gram of it. A fortune in radium. Millions of dollars' worth.

All of the radium that had been stolen was here in this hollow stone. It had not been taken from the island. Probably the thief had not had an opportunity to remove it, for in order to carry it and to protect himself at the same time, he would have to seal it in many pounds of lead, which the guards would have promptly discovered.

Drundel had secreted it here, had let it collect gram by gram, while he waited for a chance to make a get-away.

Drundel, damn him!

Steve shoved the block back into place. He got to his feet. His face was set in grim hard lines as he strode out of the room.

The time had come for a showdown. He didn't have to check the weights on the balance in the radium extraction department. He had the stolen radium as evidence.

He didn't remove his suit of armor. He hesitated just long enough to dig the pistol out of its holster and slip it, with the cell, into the pouch of his suit.

He wanted to see Drundel's face when he stalked into the manager's office. Drundel would probably deny everything, dare him to prove it.

"Well," Steve thought, "if he does try to deny it, I have just the medicine

to make him talk."

He didn't mean the gun, either. He meant something else, a threat that under other circumstances he would never have used, a threat so hideous that Drundel, or anyone else, would quail before it.

CHAPTER IV

To Catch a Thief

DRUNDEL was behind his desk when Steve came barging in. He looked up, annoyance and irritation on his face. Steve threw back his hood, so Drundel could recognize him. The annoyance and irritation changed to swift anger.

"You're supposed to be at work," Drundel snapped. "What the hell are you doing here? Get out, before I fire you."

Steve came across the room, placed both hands on the desk, and leaned forward.

"I'll tell you why I'm here, Drundel. I'm here to catch a thief."

The manager came out of his chair like somebody had set off a firecracker under him.

"What do you mean?" he rasped.

"Just exactly what I said." In a way Steve was enjoying this moment. When he had arrived at the plant, this man had showed off his authority. This man had tried to kill him. Now it was his turn to talk and Drundel's turn to squirm. He spat out the words. "You reported, over the past two years, that the radium production of this plant was steadily dropping. That was a lie, Drundel. The radium was being stolen."

The manager's eyes bulged. A pasty whiteness spread itself over his face. He swallowed. "Stolen?" He whispered the word as if all the energy had been drained out of him.

"That's right."

"But how? How, man, how?"

It was a good act, Steve thought. Drundel asking him how the radium was being stolen! As if he didn't know.

Steve told him about the false weights. He did not tell him where the stolen radium was hidden.

"But false weights! That's—that's impossible!"

"Why is it impossible?"

"Because I am the only one who has a key to that receptacle."

"That's right," Steve snapped. This play had gone on long enough. It was time to let Drundel have it right between the eyes. "That's right," Steve said grimly. He let the meaning of his words sink in.

Drundel caught the meaning. His face went a shade paler. His indrawn breath was a sharp hiss.

"Do you mean that I am a thief—" He didn't finish the sentence. He came around the desk, his hands balling into fists. "You damned dirty detective. Trying to frame me. That's what this is: a frame. I'll—"

"You'll kick me into the vats and run me through the plant and if there's anything left after that, you'll feed it to the fishes. I'm calling you a thief, Drundel, and I've got the evidence to prove it. I'm going to call you worse than that. If there's anything you want to do about it, now's your chance. You've got your fists up, Drundel: use them!"

DRUNDEL leaped. His fist crashed through Steve's hastily lifted guard and smashed into the open hood, landing in Steve's mouth. The force of the blow sent him spinning backward, off balance. He hit the wall, landed with a thud on the floor. He wasn't out. He wasn't badly hurt. The blow had been just strong enough to

make him furiously angry.

He tried to leap to his feet. And found his movements were incredibly sluggish. The armor was holding him down. He had grown so accustomed to wearing the suit that he had not realized how heavy it was.

Drundel raced toward him. Steve thought the manager was going to slug him as he tried to rise and he dropped back to the floor. Drundel fooled him. He didn't try to slug him. He jumped up and came down with both feet in Steve's stomach.

Drundel fought to win, and to hell with the ethics. In the rules of the game as he had learned them there had been no foolishness about giving your enemy a fair chance. He was tough, he was hard, and he fought with one idea in mind: winning.

Even through the armor the impact was sickening. Steve felt a surge of retching nausea. But the armor, that had got him into his predicament, saved him. The lead absorbed most of the force of the impact. Steve's arms went out and around Drundel's legs, jerked him off his feet, and Drundel crashed to the floor.

He was as agile as a cat. He wasn't trying to slug. He knew there was no point in pounding his fists into that armor. He was trying to get loose, perhaps find a weapon. Steve waited for a chance, and when it came, he smashed his left against Drundel's chin. The blow didn't travel six inches. There was not much force behind it. But Drundel's head snapped back and his body went limp.

Steve blinked. Lead armor might be cumbersome in a fight, but when you hit a man with a glove that was about ninety per cent lead, he went out like a light.

Steve rolled over, climbed slowly and unsteadily to his feet. He walked to

the water cooler, lifted it, dashed its contents in Drundel's face.

When the manager regained consciousness, Steve said, "Okay, Drundel. You can sit up at your desk and write me a nice little confession and sign it."

Drundel sat up. "You dirty detective, I'll see you in hell before I confess. I didn't steal any radium. I didn't suspect it was being stolen until you came barging in here. I don't know a thing about it. And moreover, I think you're a liar. I think you're trying to frame me. Well, you can go to hell."

THE man had guts. He was a toughie all right. He wasn't the kind to confess. He was the kind who went down fighting. But he was a thief just the same. And he was going to confess.

Steve blinked at him. He rather hated to do what he had to do. But that treacherous attempt to murder him and that jumping on him with both feet when he was down made his job easier. He took the pistol out of his pocket.

And Drundel laughed. "Shoot and be damned. You'll have to shoot before I sign a confession."

"I'm not going to use this gun to force you to sign a confession, Drundel. I'm using this gun to force you to walk where I want you to. And before Heaven, if you don't do as I order, I'll shoot you and drag you where I want you to go."

Steve meant every word he said. Drundel read his meaning. He paled a little, but his defiance was unbroken. "I'll do whatever it is you want me to do, but I won't confess something I didn't do."

Steve thought grimly: We'll see about that.

At the point of the gun he walked Drundel to the radium extraction de-

partment. But they didn't enter the department. Instead Steve forced Drundel to enter the small room where the lead suits were kept, forced the bewildered and rather scared manager to stand in the corner while he threw the suits out of the room. Steve backed cautiously out of the room, locked the door. He broke the glass and looked in. The manager was watching him.

"Drundel," Steve said. "I hate your guts. But, at the same time, I rather admire your gall. I'm offering to bargain with you. If you stay in that room for three hours, without signing a confession, I'll let you make a clean getaway. But you can take your choice. Confess, or stay in there three hours."

Drundel came to the door, looked at Steve. "What kind of a fool are you? If you think you can torture me—"

"No torture. But if you're the thief I think you are, you'll soon see one mighty good reason why you should confess."

Steve was sweating. He hated to do what he had to do. But he also had to have a confession. Drundel might have had help in the thefts, probably had had. Steve had to have the name of every other person implicated, he had to clear every possible accomplice out of the plant. This was the way to get the names, to get the confession, for certainly Drundel would rather sign a confession than stay in that room three hours, knowing that in that time the tremendous hoard of stolen radium hidden in the corner would burn his unprotected body so badly that he would die in torture in short weeks. That the burns would be invisible at first would make no difference. The burns would be there.

THE sweat began to pour off Steve in floods. What if Drundel were

really innocent? What if he condemned an innocent man to a horrible death?

But how could Drundel be innocent? How could the thefts been carried out under his very nose, without his knowledge?

Drundel had said: "You kick 'em into the vats—" Steve had been kicked into the race, which would have carried him to a worse death than the one with which he threatened Drundel. Therefore—

Steve did not hear the door open behind him. He was watching Drundel. He did not know that anyone had come out of the radium department until he saw Drundel look in that direction. Steve whirled on his heel, his gun up.

Smucker had come out of the radium room. He had a heavy bar in his hands. Just as Steve saw him, he lifted the bar into the air and leaped.

Steve shot. Before he had pressed the trigger he knew it would do no good. Smucker had on a suit of armor and the needle would not penetrate it.

Steve writhed to one side. The bar struck him on the side of the head, glanced downward to his shoulder. Bleeding, half unconscious, he was knocked to the floor. Drundel shouted hoarse encouragement, kicked savagely at the door as Smucker lifted the bar to strike again.

Steve saw it coming. It would split his skull wide open.

He had failed. Even worse than his consciousness of the nearness of death was the bitter knowledge that he had failed. He would be killed, and his body hidden, the stolen radium would be removed, the thefts would go on, and the plant that Luther Treadwell had given his life to developing would be finished.

The bar came down. Half unconscious, Steve twisted his head out of the way, took the blow on the same

shoulder where the first had struck. He heard the brittle snap of a breaking bone, felt the jarring impact of sickening pain.

He had one chance. It was something Drundel had taught him: Fight to win and to hell with the ethics. Use your feet. Steve knew he could not rise. The bar would beat him down. He rolled into a ball, kicked upward with both feet.

SMUCKER was bent double. To strike a man on the floor with the bar he had to bend down. Rising, Steve's fist struck him full in the face, shattering the heavy glass of the goggles in the lowered hood. He toppled backward, down a flight of stairs. He scrambled erect to push up his hood, screamed at the blood running down his face.

Steve grabbed the bar, climbed to his feet. He saw he did not need to strike. Smucker had blood and glass in his eyes. He was not permanently blinded but he was a pitiful sight.

Steve didn't care how pitiful Smucker looked. He was merciless. Working with one hand, he yanked and pried the armor from Smucker. He grabbed his gun. Smucker had wiped enough of the blood out of his eyes to see a little.

"You," said Steve viciously, "can get in there with your boss. You're probably both in this together. We'll see how you like being in that room."

Smucker screamed.

"Get in there!" Steve roared.

"No! No! Do anything you want but don't put me in there."

"Why not?" Steve barked.

"Because—No! No!"

"So you're the thief. What about Drundel?"

"I don't know anything—what you're talking about."

"You either confess, or you'll stay in

that room three hours—without any armor.”

Steve suddenly remember how Smucker had always hurried into and out of his armor, how he had never lingered in that room without protective covering.

“All right, all right,” Smucker was crying. “I’ll tel you, only don’t put me in there. I stole the radium. Amalgamated sent me down here as a spy. I was to put the Treadwell Company on the rocks financially by stealing the radium. After they had taken over the plant, I was to receive the radium I had stolen. Drundel didn’t have anything to do with it, didn’t know what was going on. I’ll tell you everything, only don’t put me in that room . . . for God’s sake don’t put me in there.”

STEVE squirmed. His shoulder was bandaged but it hurt like fury. He didn’t mind that as much as—

He watched Drundel. The manager, shaken and white, was at his desk. He was writing something.

Smucker sat on a chair in the corner. Cops were coming from the mainland for him.

Steve watched Drundel. He felt lousy as the devil about locking Drundel in the room with the radium. Drundel had been innocent. Steve wondered if he would have left the manager in that room long enough for the radium to take effect. Drundel was tough. He was hard. But he didn’t deserve radium burns. He had to be tough to run a plant like this. Hard. Old Luther Treadwell had been tough and hard.

Drundel finished writing. He handed the paper to Steve. “Here. You might as well include this with your report to the directors. It’s my resignation.”

“Resignation! Why? You didn’t steal the radium.”

Drundel laughed bitterly. “I was

boss. A man I trusted, a man I put in a responsible position, was a thief. It was my responsibility. I would never be able to convince the granite-faced board of directors who handle the Luther Treadwell estate that I wasn’t negligent. They’ll fire me, so I might as well resign.”

Drundel was bitter. Bitter and hard. He had a right to be. But Steve shook his head. “I don’t think they’ll fire you—not after I make my report.

“You’re a detective, kid. You don’t know how these boards operate. The fact that they had to send a detective will damn me. They’ll fire me.”

Steve still shook his head.

“I’m not a detective and I don’t think they’ll fire you.”

Drundel stood up. “What the hell are you then?”

“My full name,” Steve said, “is Steven Porter Treadwell. Luther Treadwell was my father. That’s why they won’t fire you. Because I own the controlling interest in this plant. When I finished school I found this business in a failing condition. I came down here to do something about it.”

Slowly Steve tore up the resignation. Drundel sat down heavily. Steve glanced at him, then turned his eyes away. He didn’t expect Drundel to show much surprise, or to thank him. Drundel did neither. He just sat and looked.

Steve didn’t care. He didn’t want to be thanked. He owed Drundel something. He owed Drundel a hell of a lot. He was still trying to make up his mind whether he would have kept the manager in the room with the hidden radium the full three hours he had threatened.

He made up his mind. The answer was “No.” He felt damned good about that.

THE END

Coming NEXT MONTH

MANLY WADE WELLMAN'S SEQUEL TO "BATTLE IN THE DAWN"

Hok, the cave man, comes back, this time in a thrilling story of ancient Atlantis, and a lost land in the valley of the Mediterranean. Was Hok the hero we know today as the legendary Hercules? Wellman has woven a story replete with accurate science, interesting legend, and thrilling action that will hold you spellbound.

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FRANCES GARFIELD

Who relates a gripping story of a woman named Sarah Tugg. It is a story of a world circling the double star, Alpha Centauri, and of the "Gulpers" who inhabit it. Sarah hated the forsaken world, and she hated the "butterflowers" on which their future depended. She had the tongue of a nagging woman, and the temper of a tigress. Perhaps if the Gulpers had known all that, they might have thought twice before carrying their plans of revolt to completion.

These are just two of the fine stories in store for you in the

DECEMBER ISSUE

AMAZING STORIES

ON SALE OCTOBER 10

QUESTIONS and ANSWERS

This department will be conducted each month as a source of information for our readers. Address your letters to Question and Answer Department, AMAZING STORIES, 608 S. Dearborn St., Chicago, Ill.

Q. How is hydrogen displaced from water?—C. L., Kansas City, Mo.

A. In making hydrogen in the laboratory dilute acids are used almost exclusively. The most common acids are hydrochloric acid and sulphuric acid. In combination with metals such as iron, zinc, and magnesium, the acids, diluted in water, will interact to form bubbles, thereby releasing the hydrogen. The metal combines with the negative radical, and so liberates the hydrogen. When excess of metals is employed, hydrogen continues to be evolved until the acid present is all used up. For preparing small amounts of hydrogen, the apparatus is such that additional acid may be added through the "thistle" or safety tube, as desired. This avoids opening the flask and admitting air. The gas may be caught like oxygen over water, or, being lighter than air, may be collected by downward displacement of the latter.

* * *

Q. Is alum really obtained from aluminum?—R. C. P., Wood, Wisconsin.

A. When aluminum sulphate and potassium sulphate are dissolved together in molecular proportions, the solution deposits transparent octahedral crystals of potash-alum. This salt is more easily freed from impurities than is aluminum sulphate, and is therefore used instead of the latter in medicine, in dyeing (delicate shades), and to replace the cream of tartar in making baking soda. Sodium-alum, ammonium-alum, and chrome-alum are made in the same way, and crystallize in the same form. The first two are used as sources of aluminum hydroxide, and the last in the fixing bath to harden the gelatine on photographic film and plates.

* * *

Q. Are there really "dead" stars?—D. Carruthers, Mobile, Alabama.

A. We have no positive knowledge of dead stars; which is not so surprising when we reflect that a dead star means an invisible star. But when we see so many individual stars tending toward death, when we behold a vast number of all conceivable ages, we presume that there are many already dead. On the other hand, there is no reason to suppose that the universe is running down, even though many writers hold that this is so.

Q. What is meant by the term, Harmonic motion?—Jerry Whitfield, Detroit, Michigan.

A. Harmonic motion is the motion of a projection, on the diameter of a circle, of a particle moving with constant speed around the circumference of the circle.

* * *

Q. What makes water "hard"?—Mrs. A. W., Wichita, Kans.

A. All natural waters except rain water, which is soft, contains salts of calcium and magnesium in solution, dissolved from passage over and through the soil.

* * *

Q. How is bakelite made?—Daniel Frankinson, Providence, Rhode Island.

A. Bakelite is prepared from formaldehyde (CH_2O) and phenol ($\text{C}_6\text{H}_5\text{OH}$). Under suitable heat treatment the mixture gradually sets to a solid, hard, infusible, resinous mass, which is insoluble in all known solvents. Before it sets it can be dyed, or "filled" and it can be applied as lacquer, or molded to any form.

* * *

Q. What is lampblack?—L. L., Minneapolis, Minnesota.

A. When an iron vessel, cooled by a stream of water circulating through it, is suspended in the luminous flame of natural gas or burning petroleum, the soot is deposited on the vessel. By rotating the latter, the soot can be continuously scraped off by a stationary piece of metal. This product is lampblack, and is simply very finely divided carbon. It is used in making printer's ink, India ink, and black varnish. A great deal of finely-divided carbon is also obtained as a by-product in the cracking of oils, and it is utilized chiefly as fuel.

* * *

Q. Is the famous meteorite of Meteor Crater, Arizona a large, single meteorite, or a collection of small pieces?—Walter Campbell, San Francisco, Calif.

A. Meteor Crater was caused, scientists think, by the impact of either a giant meteorite, whose main body has never been found due to the fact it did not strike vertically, or a comet, composed of a mass of fragments. Many pieces have been unearthed of various sizes, numbering in the thousands. However, these may be from breakage or fusion of a larger mass.

Science Quiz

The following quiz has been prepared as a pleasant means of testing your knowledge of things scientific and pseudo-scientific. We offer it solely for the pleasure it gives you and with the hope that it will provide you with many bits of information that will help you to enjoy the stories in this magazine. If you rate 60% correct in your answers, you are considerably ahead of the average.

Water on the Brain!

A man has two measures—one of five pints, one of three pints, and one other container.

His problem is to get exactly one pint of water in each of the two measures. How can he do it?

A Dark Age!

One day a boy asked his father what was his own age and his father's age. In reply the father said, "I was twice as old as you are the day that you were born. You will be what I was then when fourteen years are gone." The boy, after deep contemplation, solved the problem of their ages. Can you?

TRUE OR FALSE

1. Brass can be used as an insulator between two magnetic points. True.... False....
2. It takes about eight torpedoes to sink a modern battleship. True.... False....
3. The average person can survive from ten to fourteen days without food or water. True.... False....
4. Tuberculosis is not hereditary. True.... False....
5. The great majority of man's acts are performed consciously. True.... False....
6. A dragon fly makes 110 wing strokes a second. True.... False....
7. Male mosquitos are the only mosquitos that bite. True.... False....
8. There are about 2,000 feet of wire in a full-sized window screen. True.... False....
9. A lion crossed with a tiger is called a puma. True.... False....
10. Sound travels faster than the sense of touch. True.... False....
11. The oleander flower is deadly poison. True.... False....
12. Water will rot rubber. True.... False....
13. Fish live in the Dead Sea. True.... False....
14. Leaves of trees are often found to contain starch. True.... False....
15. Atmospheric pressure increases with the distance below sea level. True.... False....

SCRAMBLED SCIENCE TERMS

1. A mode of transportation. RAILENPA _____
2. An element. LAMABAENI _____
3. An extinct animal. DURINSOA _____
4. A renowned scientist. SETINIEN _____
5. The solid earth. HITOLEPSEHR _____

DO YOU KNOW

1. Whether or not there are any surface markings discernible on the planet Venus?
2. Whether Aluminum or Nickel is obtained from the ore Bauxite?
3. The distance to the nearest star?
4. Four methods used by astronomers in photographing the planets?
5. What the periodicity of Halley's comet is?
6. What famous author invented the submarine in fiction before it was invented in fact?
7. What animal carries the disease known as Tularemia?
8. What metallic element will subdue the odor of kerosene?
9. How many rose leaves are necessary to make one ounce of attar of roses?
10. Who devised the modern definition of the elements?
11. Whether engineers allow for expansion and contraction under the influence of heat when building a bridge?
12. Who discovered radium?
13. How the planet Pluto was discovered?
14. What color the earth appears to me, as viewed from space, and how this is known?
15. How Saturn is supposed to have gotten its rings?

STRIKE OUT THE WORD THAT DOES NOT CONFORM

1. Cirrus, cumulus, stratus, humus, nimbus.
2. Mercury, Venus, Earth, Mars, Jupiter.
3. Laccolith, batholith, monolith, volcano, sills.
4. Mimas, Ariel, Tethys, Hyperion, Enceladus.
5. Azoic, Aztec, Toltec, Acolhuan, Tepanec.

Meet the Authors



RALPH MILNE FARLEY Author of
THE HIDDEN UNIVERSE

THE idea for this story sprang from a one-paragraph news-filler in the Green Sheet of the Milwaukee Journal, which clipping now reposes in my once-famous scrapbook, noted for the quotations which it used to supply to introduce my "radio stories."

This latest clipping reads:

"The surface of the earth is smoother in proportion than that of a perfect billiard ball."

The diameter of the earth is roughly 8,000 miles. Mount Everest is 5.5 miles high; and the Mindanao Deep is 6.7 miles deep. Resulting average tolerance of the earth's smoothness, almost exactly three-quarters of a percent.

The diameter of a standard billiard ball is 2 and 25/64 inches.

According to a letter to me from the Brunswick-Balke-Collender Company:

"Billiard balls are trued to a close degree of accuracy, tolerance split part of 1/1000 of an inch. Those of elephant ivory are susceptible to temperature changes, and this will, after a period of time, cause the ball to become untrue or out of round, making it necessary to have them retrued."

So that, although the initial tolerance of a brand new billiard ball is thus less than four-tenths of a percent, i.e., about half that of the earth; it is easily seen that, after a short period of use, it would approach the roughness of the earth.

Thus the clipping is approximately correct.

On reading the above, Mrs. Farley remarks:

"How disillusioning! The next time I feel an urge to see the mountains, I'll save money by going over to the Bucyrus Club and looking at a billiard ball."

Thus there are certain indirect financial advantages to being an author of STF, in addition to the direct return of a certain number of cents per word!—Ralph Milne Farley, South Milwaukee, Wisc.

WILLIAM F. TEMPLE

Author of

THE 4-SIDED TRIANGLE

SEVERAL years ago, a Science Fiction fanmag had an article in its pages which said that the only way for science fiction to spread, advance, and grow stronger was for it to weld within itself the themes of other kinds of fiction. For there are a limited number of plots in the world—some cynic said there were only three—and in my opinion (though hordes of fans will disagree violently) the plots in science-fiction have been particularly limited. Most plots that come along can almost instantly be recognized and popped into a pigeon-hole. Though please note that this does not necessarily detract from the entertainment value of the story; it's the way a yarn's spun that is really important.

A plot is a variation on a theme. The writers of ordinary fiction have a very large field of plots to pick from because they concentrate on the theme of human character, and the number of variations one can play on the interworkings of human emotions is pretty enormous.

Now, science fiction authors have, with a few exceptions, largely ignored the human side of the characters in their stories, and thus fettered their own imaginations. The editors of AMAZING realized this when they introduced the "human story" angle into AMAZING'S policy, and opened the magazine to a wider variety of plots than any hitherto.

In my particular story I have taken the famous (or infamous) "triangle" theme and attempted to treat it in terms of science fiction. In working it out logically, I think I have brought the problem to a new solution, not possible in any other branch of writing than science fiction. The whole story is an experiment, just as much as the experiment described in the story.

Incidentally, if some readers think the atom manipulation in that experiment completely "screwy," I can only say that it also appears that way to me—at the moment. But people are doing some weird and unexpected things with atoms these days, and the recent experiments of Joliet, Adler, and von Halban seem to indicate that the release of atomic energy is almost upon us—after some physicists had proved to their satisfaction that such a thing was impossible. You never know!—Wm. F. Temple.

DISCUSSIONS



AMAZING STORIES will publish in each issue a selection of letters from readers. Everybody is welcome to contribute. Bouquets and brick-bats will have an equal chance. Inter-reader correspondence and controversy will be encouraged through this department. Get in with the gang and have your say.

HOW ABOUT IT, TOFTE?

Sirs:

What's this! David McIlwain back in Discussions again? A voice from the grave! All we need now is Wild Bill Hoskins, for these two used to get on beautifully with the King's English a few years back. Remember them, Readers? However, maybe Mr. Keillor is stepping into Wild Bill's honored shoes. Are ya listenin', Bill?

It does not make much difference to me on what cover you have Paul, as long as he is on. But give the other artists chances too, for they all have their points.

By the way, everyone ought to see the G. M. exhibit at the New York Fair. Here is the August "Cities of Tomorrow" cover given a body—perhaps man will soon give it life!

I think Author Tofte slipped up on his "Warriors of Mars." How on earth (or on Mars as the case may be) could an Earthman possibly mate with a Martian Woman who lays eggs, even granting that there are more things under the sun than this world dreams off? As a rule, stories that run in a series, like the "John Hale" stories, are more entertaining. Repp and Wilcox were tops in my opinion this month. What is Hale's next case?

Discussions is the best feature in Amazing, and not wishing to crowd out the other fans, if this epistle rates a place, I'll say keep the home fires burning, but not with Amazing.

Wilbur J. Widmer,
679 Park Avenue,
West New York, New Jersey

NO. 1 FAN?

Sirs:

Here it comes! I question your crowning of correspondent Jack Darrow (*vide Aug. issue*) as "Fan No. 1." (He is not even King of the Letter Columns any longer, that honor being attributable, nowadays, I should say, to T. Bruce Yerke.)

No doubt Darrow's and all other eyes (including ed's upon first reading) rush to the end of this audacious letter to read the writer's name. You find, of course, a pseudo-name—and I have even adopted the precaution of having this copied and forwarded by a friend in another state, who is not even an s.f. fan—as I have no desire to

incur the displeasure of J.D. if he reacts unfavorably.

"With malice towards none and justice for all" I merely wish to call to the attention of the editor, who does not seem to have gotten the info. via the s.f. "grapeline," that Jack Darrow is not considered Fan No. 1—not by the fans themselves, who just recently took a poll. This Independent Public Opinion, conducted by Jack Speer via the Science Fiction Fan fan-mag, proved radical DONALD A. WOLLHEIM to be first in Fandom, followed by super-active Sam Moskowitz, with famous "simplified speller" Forrest J (no dot!) Ackerman third. It is significant to note that out of eighteen names rated, Jack Darrow was not even considered by the fans! The next time you print a letter from James V. Taurasi you could head it "From Fan No. 4." Robert W. Lowndes was accorded 5th place, and so on down the line to the last on the list, notable in that it introduces a woman! Myrtle R. Douglas of Los Angeles, Esperantist known as "Morojo."

So much for that. Except to say that I would not be surprised if some revision in the top brackets of the foregoing would prove necessary after the CONVENTION, my surmise being that Moskowitz will assume first place, with Taurasi or "4SJ" in second and DAW third or fourth . . .

On the issue of Darrow's having the most extensive collection in the country I am again a "Doubting Thomas"; for I have a notion there may be no such thing as the biggest or best collection. One may specialize in fan-mags, another in excerpts, a third have the biggest bunch of books, and so on. I do not imagine any one collection excels in ALL these respects. But Ackerman, Wollheim, and some of the "Philly Phelows" have about everything extant, I hear—and duplicates of some!

"The Man Who Walked Through Mirrors" walked away with first place this month, in my estimation, with "Wives in Duplicate" second. I especially enjoy the scientificcartoons in AMAZING, and editor's friendliness.

Signed "X"

(But the signature looks more like Porbeno de Vero.—Ed.)

● What a pal you turned out to be, Porbeno de Vero! Here you up and give me all this fan-fact about leading fans, and you refuse to sign

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your name! Maybe you are one of the "leading" fans! Come, my dear fellow, no modesty now. Not among fans! Anyway, thanks for all those names and how they rate in the fan world.

And Mr. X, I hope you have become a fan by your participation. Anyway, you'd better read **AMAZING**, now that you've got your hand (or foot!) in it.—Ed.

AN ANSWER TO OUR ANSWER

Sirs:

A matter of great interest to me was the editorial reply to an accusation of a "corny" story policy." Permit me to say, Mr. Editor, that I am pleasantly surprised at your requirements for a story. The criteria you set forth should produce a really good grade of stories—but apparently you define those terms somewhat differently from the way I do. Granted, then, that everyone has a right to his own interpretation of the terms. But surprisingly enough, some of the qualities you demand in a story are the very things I've never been able to find. Passing over plot, characterization, and so forth, we come to significance.

It is that very characteristic which I have found most lacking in the yarns in **AMAZING**. "If the reader says 'so what' after reading a story, it is a reject." But that's just what I do say when I've finished the majority of the stories. "O, hum; another deadly peril overcome by the hero; another more or less ingenious scientific process or device on which the story is based—ingenious but implausible; another pretty gal; a few more thrills and fast action; and that's that." Such is my reaction. The story has given me no new ideas; it has given me nothing to think about; and I'll never experience the urge to read it again. What it has given me is fifteen minutes or so of more or less enjoyable entertainment—usually less—and that's not what I read things for, primarily. If I could only believe in those stories; that is, if they were only convincing—I would sit up and take notice.

Shall I mention a few authors and stories I think you would have rejected (questions of length aside) according to your present policy? If Poe were alive today—he did write science fiction sometimes, you know—he wouldn't be able to sell you a story; neither would Lovecraft. **THE MOON POOL** would never have appeared in the new **AMAZING**, nor would any of Williamson's **LEGION OF SPACE** series. John Taine would be excluded; so would H. G. Wells. Campbell's Arcot, Morey, and Wade stories would have been turned down. Perhaps the **SKYLARK** stories would have been admitted; I don't know—they weren't very "down to earth," and that, according to past editorial statement, is desirable. I could continue, but there would be little point in so doing. Those authors gave one something to *chew*; something to think over. Do you see what I'm getting at? What I want to say is that you may, with your present policy, print an occasional good story; but you will never print what have been called classics, or any excellent

yarns, without an exception to that policy. None of the stories you print will be talked about for years afterward, as are some of the aforementioned stories.

Perhaps I can foresee your rebuttal—especially to my remark about Poe and Lovecraft. "We're not interested in printing literature; we want to give the readers what they want: exciting, action filled stories. "Would you want us to give you Shakespeare?" No, I wouldn't; but I hope I've given you the idea of what I do want. If you're not interested in printing stories that have some literary merit, and are well written—but instead adhere to action without description—then I'm afraid our tastes are irreconcilable. If so, why—that's that, I guess; we go separate ways, and no hard feelings.

Ralph C. Hamilton
920 College Ave.,
Wooster, Ohio.

● May I name a few stories coming up which I think are a result of this "corny" story policy discussion? Our authors are beginning to see what we (and the readers) want, and are beginning to give it to us. Examples for you to be on the lookout to read, are: "Sons of the Deluge," by Nelson S. Bond; "The Hidden Universe," by Ralph Milne Farley; a sequel to "Battle in the Dawn," by Wellman; Don Wilcox's latest novellette, as yet untitled; "Four-Sided Triangle," by Wm. F. Temple; and others. The first two mentioned are novels. Only the last is a short. The point I'm getting at is, that it takes time to educate the authors to our policy, and if the results are still "corny," take heart. In this issue, I'd include Bond, Binder, Williams, Beynon, and Laurence in the list above. All are considered by your editors to be really out of the usual field of science fiction. Let's see what you think about them.—Ed.

FEUD!

Sirs:

Briefly, the situation is this: 1. I wrote a letter to Discussions (March, 1939), in which I mentioned certain gentlemen who absorb valuable space in A.S. by writing wordy letters in every month. 2. A Mr. David McIlwain, whose letters are familiar to us all, was aroused when his copy got to England. 3. As a consequence he came into the May and August issues with several flowery remarks concerning the magazine, the editor, and myself. 4. At the risk of practicing what I preach against, I am writing this second missive for the purpose of getting the cards out on the table. I'd like to know whose opinion is supported by science fiction readers. I want to know whether McIlwain wins this debate, or I do.

I expressed the opinion that readers should not be continually writing long letters to Discussions because they occupy too much useful space in A.S. My further contention was that these habitual letter writers are being prompted by egotism. I think this is especially true of persons who are always criticizing.

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number of letters derogatory of everything from the front cover to the editor's rear end, which he can't kick. In one letter he suggests the implication that the editor is a "victim of senile and mental decay." Again he writes, "Stop shoving your Editorial oar into the effervescent effusions . . ." His last letter contained the statement, "You deliberately and maliciously hacked huge chunks out of my letter . . ."

In defending his actions McIlwain says that fan activities are a "form of self-expression, and an outlet for creative abilities." He follows that by asserting that the ego *does not* prompt one to indulge in these fan activities. Is it not easily seen that self-expression and exercise of creative abilities are prompted by the ego for its further embellishment?

Regarding the magazine I want to say simply and sincerely that it is the *best* by a wide margin.

*King Keillor,
10 Catherine Avenue,
Waterbury, Connecticut.*

● All I know, boys, is that you both read A.S. and that's enough to keep me chuckling, so hattle it out, boys, but keeping the letters coming, with criticism or praise. It's the only way we have of knowing what you like and don't like, and that goes for all the readers.—Ed.

OUR POLICY "REVISED" AGAIN!

Sirs:

For some time I have been feeling that your editorial policy should be revised, and I would like to make a few suggestions. You state that you have to maintain this and that objective in each and every story. I maintain, quite as firmly, that you most certainly do not.

I would like to imagine that a distant brother of all fiction is in the movies. They are not held down by "editorial policy." And half the pictures we behold are comical whimsy. Look and wonder at the Marx brothers, Bing Crosby, Carole Lombard, and the others that go to make up half of Hollywood success. Comedy is predominant.

Being extremely poor at remembering the names and authors of stories, I cannot quote examples by names, but such an example is in the case of the punch-drunk pug who was sent into the future by a professor. His experiences there were as funny as anything I have read. One of your contemporaries published; just this month, a story of a group of college professors who made a bet on what it would take to succeed in another age. They sent a man of science and a circus barker back together. Why can't and don't you run humorous stories? Is science fiction like its foster father, true science? Is it composed of cold fact, emotionless, and heroic?

Let an author send someone into the past about three or four hundred years and then try to give that knowledge to our forefathers. In other words, set up a community of 1540 A.D., with all its mores, prejudices, and superstitions, and then send a twentieth-century man into their midst. What would he do? Would he make guns and fight a

war to end all wars there and then? Or would he try to amass a fortune? If so, would he do it honestly, or would he try to introduce present-day skin-games on those naive citizens? Or would he give them the knowledge of the three hundred years to come? He would have to proceed slowly on the assumption that he would be burned for witchcraft if he were to pull anything too drastic out of his head.

Or bring a long dead relative to life, and think of the joy and pleasure a person would have in showing him how the world has forged ahead in the last fifty years. Bring Aristotle or Copernicus to 1939 and bewilder them with radio and chemistry. There would be no saving of the race. The world would not be preserved. But there would be entertainment in such a story.

In other words, I am sick of getting dazzled by the people of 2539 A.D. And of the unbelievable scientific progress of Mars and Venus. Or of the Flash Gordon type person that fights everything from the Tiger-Men to the Carnivorous Moles of Nova Luney who live in caves dug with atomic power. Let our pride get a chance at some self-satisfaction. Let us dazzle Sir Francis Drake with the China Clipper or dumbfound Galileo with the Mt. Palomar scope.

Bacon, eggs, mush, and milk are a good healthy diet for a few days. But for crying out loud, I sure would get tired of them. Let's have some okra, sweet potato, fried chicken and dumplings. Let's say you, Mr. Editor, were to find a method of going back to mediaeval England. There you were to be left until you felt that you had helped the common good as much as possible. Where would you arrive? Where would you spend the first night? The next morning you would be ready to go to work. What would you decide to give them first? The secret of electric power? Surely not the secret of modern firearms? Would you build a simple generator and light bulb? Or would you get an appointment with the king to enlist his aid?

I guess I have popped off enough on the subject of content except to say that *Wives in Duplicate* rang my bell. I think we are due for a sequel to *The Man Who Walked Through Mirrors* so that we may follow the adventures of Editor Stanhope. I think you might tell us if Robert Bloch was telling us truthfully just as to whether or not you S.F. editors are really beset by nuts.

Fuqua has one failing on the covers. He isn't quite sure as to what his other-world scene will contain. Hence his details aren't as clear as Krupa's.

*Connell R. Miller,
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Dallas, Tex.*

● Authors, attention! How about it? Here's a reader with plots. Grab 'em, you writers, and give the fella what he wants. Maybe, Mr. Miller, you haven't seen much of this sort of stuff, because our writers still miss the boat on putting "significance" into their yarns, and when you

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analyze what you've just said, that's exactly what you are asking for, and what we've been trying to get. And humor? Who said we don't want it? Take a slant at F.A. for September? What about Wilberforce Weems?

Nuts? Sure we get 'em! Bloch has given you a story that's so true to life even your editor gets a big kick out of it. Maybe Stanhope will be back sometime with a new adventure. Bloch knows.—Ed.

TRUE EXPERIENCE

Sirs:

Last week I picked up a copy of AMAZING STORIES and while glancing through the illustrations, I came across Krupa's illustration of a sequence of Lieutenant John Pease's story "Horror's Head." Now this illustration had a special appeal to me and, being anxious to read the story, I purchased the copy immediately. The reason for my interest is this: It all started about 5 years ago. I had written to my brother telling him to expect me to pay him a visit on a certain day.

On arriving I was informed that my brother was "hellishly busy" and in a stinking temper.

"Alright, I'll amuse myself in here," I said and entered the untidy room which Paul called "the study." On a chair I found several pages of script written in Paul's precise hand. I started reading—a most ridiculous idea about the decapitation of a human head and keeping it alive. I became engrossed however, until my interest was turned to nausea when I read of such things as cauterization, arterial tubes, ganglia fibres and the sensory reactions of a man's head without a body. In fact I was actually believing what I was reading when I was brought back to my senses by a most inhuman sound not unlike some sort of an animal scream and Bradley, my brother's assistant, appeared in the door-way laughing inanely. The man was obviously mad. What had happened in that work-shop to reduce this chap to a laughing maniac?

"I've got him where he belongs. Yes. I got him where he belongs," he repeated. Then advancing toward me with bulging eyes he babbled: "He was a devil. Your brother was a devil cutting off the heads of poor harmless animals. That's what he was doing. I watched and learned. Yes! I learned. Come! I'll show you," and I was pulled into the work-shop by this babbling maniac.

I froze with horror when I beheld on a large black disc, my brother's head with an expression of agony on his features. I advanced toward the horror but stopped abruptly when the head spoke. "You cunning devil, Bradley," it said. Then the door behind me slammed loud. I heard the key turn in the lock and Bradley's mad laughter coming from the other side.

I dashed to the door screaming.

Above the din my brother's voice came to me. "Forget about Bradley," he yelled, "keep your head. Stop being so damned hysterical. These circumstances call for a clear head. On a nail in the corner there you will find a key; use it and open the door. Go to my study where on a

chair you will find a manuscript. Bring it to me. Go quickly and don't waste time looking for that fool of an assistant."

I found the key, opened the door and started to carry out his instructions, but on returning to the work-shop I found, grinning at me from the black disc, the head of Bradley!

When I regained consciousness I found myself lying on the settee in Paul's untidy room. My collar had been loosened and my brother and Bradley were leaning over me. Bradley was saying, "Ah! He's coming to. God! Paul, I thought it was too much for him."

My brother smiled and asked, "How are you now, Mug?"

"What happened?" I asked, coming to my feet.

"You have just witnessed an elaborate version of an old but still popular illusion," said Paul.

Like a flash the whole thing came to me. The old "head without a body" illusion seen in many side shows.

"How did you know that I was prepared to be so convinced that it was not an illusion?" I asked.

"We were watching your every move through that hole there," said Bradley, indicating a small hole bored in a panelled partition of the room.

In your November issue you estimated, in reply to one of your readers' questions, that there were about three hundred thousand science-fiction readers. You can add me as an extra one in the army of readers of your magazine—and all because I saw that illustration.

David R. Evans,
16 Mary St.
St. Kilda S.2,
Victoria, Australia.

● All your editor can say is that he's glad he hasn't a brother like that. What a joke to play on a poor defenseless science fiction reader!—Ed.

SCIENCE FICTION FAN MISSING

\$100.00 reward for information leading to the locating of Robert W. Ettinger, who disappeared on Jan. 22, 1938 from 621 E. Jefferson, Ann Arbor, Michigan. He was a University of Michigan student and inventor of chemical processes. He is most likely to be working for a Chemical Company, Mining Outfit or Ore Refinery.

Description: White—20 years old. Full Name: Robert Chester Wilson Ettinger. Weight: 160 lbs., Height 5 Feet 11½ Inches. Dark Curly Hair, Wears Silver Rimmed Glasses, Small Scar Over Left Eye, Under Hairline, Inclined to Stoop a Little, Talks Fast but is Generally Inclined to be Solitary, Not Very Sociable, Entirely Wrapped Up in his Inventive Activity. His Mother is Very Ill from Worry Over His Absence.

Please Notify: Alfred Ettinger, 8755 Grand River Avenue. Res. Address, 18452 Birchcrest Drive, Detroit, Mich.

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WHY LINDBERGH CAME HOME



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CORRESPONDENCE CORNER

Michael Drohn, 608-18th St., Newark, N. J., wants pen pals interested in Astronomy and Photography. 17 yrs. old. . . . Allan Akam wants correspondents, either sex, from all over the world, except Scotland, Wales and England, interested in SF, Politics, Films, etc. All letters will be answered. 17 yrs. old. . . . Elmer E. Weinman, 57 Lyndhurst St., Rochester, N. Y., will sell complete sets, annual, quarterlies, WEIRD and SCIENCE FICTION, 500 hooks and excerpts, to person making best offer. . . . Jack Raleigh, 19 Outlook Ave., West Hartford, Conn., wants pen pals regardless of age, sex, whereabouts and will answer each letter. 15 yrs. old. . . . Julius Unger, 1349-50 St., Brooklyn, N. Y., wants to acquaint readers with Fantasy Circulating Library supplying fans with complete fantasy collections. If interested write him. . . . D. Sisler, 3111 Adams Mill Rd., N. W., Washington, D. C., has the following back numbers in good condition to go to highest bidder: Vol 1., No. 1 April, 1926 to Vol. 6, No. 11 January, 1932 of A.S. Annual and Quarterlies for 1928, 1929, 1930 and 1931 of A.S., and many other science fiction magazines. . . . Louis Goldstone, Jr., 622 Presidio Ave., San Francisco, Calif., wants to sell following back numbers: AMAZING Quarterlies, Vol. 2, Nos. 1-4 (nos. 1, 3, no covers) 40c, A.S. Oct., Nov., 1926, 35c, Oct., Nov., Dec., 1927 (no covers) 25c, Feb., Mar., 1928, 25c; AMAZINGS (3) contain "Skylark of Space" complete, sold as set \$1.00. . . . John Wright, 35 Dolphin St., Coogee, Sydney, Australia, wants pen friends, any country, either sex, 15 to 19 yrs. old. . . . Larry B. Farsaci, 48 Lewis St., Rochester, N. Y., is interested in RECLUSE MAGAZINE and wants to sell to best offer following books: "Darkness and Dawn" by Geo. Allan England, "The Messiah of the Cylinder," Etdorpha or The End of Earth," and odd copies of Black Cat Magazine. . . . John Cunningham, 2050 Gilbert St., Beaumont, Tex., would like to obtain Dec., 1938 issues and will pay reasonable price. Desires foreign correspondents reading A.S. between 17 and 19 yrs. old. . . . Julian F. Parr, 26 Edward St., Shelton, Stoke-on-Trent, England, has formed Stoke-on-Trent SF Club and wants new members Applicant must live in Stoke-on-Trent. . . . Roland Mattison, 2720 Normal Ave., Chicago, wants pen pals, either sex. 17 yrs. old. . . . Phil Little, 150 Verba Buena Ave., San Francisco, Calif., wants pen pals. . . . Leon Richardson, 41 Avenue D., Rochester, N. Y., wishes to dispose of complete sets of AMAZING, all Quarterlies and Annual. . . . Desmond Leigh, 64 Commercial Rd., Macclesfield, Cheshire, England, wants correspondents, either sex, any country, general or scientific material. Particularly interested in radio. 17 yrs. old. . . . Robert R. Young, 88 West End Ave., Somerville, N. J., wants to sell complete collection, not in broken lots, of A.S., Quarterlies, Annual, and all other science fiction magazines excellent condition. . . .

MONTHLY MERIT AWARD

WE ARE happy to announce that our newest author to climb into limelight, Mr. Don Wilcox, has successfully carried out our predictions concerning him, by winning the Monthly Award for September. His story "When the Moon Died" was selected by our readers as the best by far, in that issue. We therefore award Mr. Wilcox our \$50.00 prize for the best story of the month. Congratulations, Don, and come again. We feel that science fiction readers will hear a lot more from you in the future. Science fiction fan, John Kuhr, of 3322 S. 8th Street, Milwaukee, Wisconsin, is the lucky voter who wins himself \$10.00 for selecting the winning story and coming closest to the actual ballot results. In fact, he has earned the enviable distinction of being the first of our readers since voting began, to list the stories exactly as they appear on the final ballot.

"When the Moon Died" polled 1530 votes out of a possible 1944. The entire listing follows (percentage figures are based on total votes, 100% equaling 1944 votes):

<i>Title</i>	<i>Votes</i>	<i>Rating</i>
1. When The Moon Died.....	1530	.79
2. Face In The Sky.....	1296	.67
3. Beast Of The Island.....	1269	.65
4. The Underground City.....	972	.50
5. Rocket Race To Luna.....	963	.50
6. The Fate Changer.....	828	.42

Now, who will win for October? If you haven't already gotten your vote in, hurry with it. As for this issue, our offer is continued, and the author of the best story will receive \$50.00. The reader who comes closest to the winning lineup of stories, and who writes the best letter of 20 words or more on why he or she selected story number one for that position, will receive \$10.00. Get in on the fun, and make yourself a little easy money. Use the coupon below, or submit a reasonable facsimile.

CLIP THIS COUPON AND MAIL

Amazing Stories,
608 S. Dearborn Street,
Chicago, Illinois.

In my opinion the stories in the November issue of **AMAZING STORIES** rank as follows:

	No. Here
The 4-SIDED TRIANGLE.....	_____
THE HIDDEN UNIVERSE.....	_____
WHIRLPOOL IN SPACE.....	_____
DICTATOR OF PEACE.....	_____
LEGION OF THE DEAD.....	_____
MISSING: MILLIONS IN RADIUM.....	_____

Name

Address

City State.....

Attached is my letter of 20 words or more, on my reason for selecting story number one for that position. ☐ Check here.

QUIZ ANSWERS

Water on the Brain

Fill both the 3 pint and 5 pint measures, pouring the contents of the three pint measure into the third container, which we will call X. Then fill it again from the five pint, leaving two. Empty three pints into X, making six pints there. Pour the contents of the five pint measure (two pints) into the three pint measure. Fill the five pint measure from X, leaving one pint in X. Finish filling the three pint measure from the five pint, leaving four pints in the latter. Throw out the contents of the three pint measure, and fill it again from the five pint, leaving one pint in the latter. Again throw out the contents of the three pint measure, and empty X, which contains one pint, into the three pint measure.

A Dark Age

The father is 42 and the son is 14 years old.

True or False

1. False.
2. False.
3. False.
4. True.
5. False. 75% are performed unconsciously.
6. False.
7. False. The female mosquito bites.
8. False. There are about 2700 feet in a window screen 5"x3".
9. False. It is called a Tigris.
10. False.
11. True.
12. False.
13. False.
14. True.
15. True.

Scrambled Science Terms

1. AIRPLANE.
2. ALABAMINE.
3. DINOSAUR.

4. EINSTEIN.
5. LITHOSPHERE.

Do You Know

1. There are not. Professor Frost once visually observed a planetary marking shaped like a duck, but could not substantiate it. The surface of Venus is obscured by perpetual clouds.
2. Aluminum is obtained from this ore.
3. Alpha Centauri is $4\frac{1}{3}$ light years away.
4. Ordinary photography, ultra-violet photography, infra-red photography, and most recently, full-color photography.
5. Halley's comet completes its orbit once in 75 years.
6. Jules Verne.
7. The rabbit.
8. Metallic quicksilver.
9. Two tons.
10. Boyle.
11. Yes. A considerable amount is allowed for metal expansion.
12. Madame Curie.
13. By means of a photograph. A young assistant, comparing two photos on file, discovered a body that had apparently moved, where no moving body should be.
14. The earth appears to be blue, from space. We know this from the color of earthlight, reflected from the moon's surface.
15. Saturn once had one more moon than it does today, the ring being the debris of a shattered satellite. There are other theories, but this is most generally accepted.

Strike Out the Word That Does Not Conform

1. HUMUS—the rest are clouds.
2. JUPITER—Jupiter is a major planet; the rest are terrestrial planets.
3. MONOLITH—the rest are formations due to volcanic action.
4. ARIEL—Ariel is a moon of Uranus; the rest are moons of Saturn.
5. AZOIC—the rest are old Mexican tribes.

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INTERPLANETARY COMMUNICATION

BY LYLE D. GUNN

Depicted on the back cover this month is artist Duffin's conception of an artificially induced auroral display which could be used to communicate with other planets

(Painting on Back Cover by Howard M. Duffin)

I NTERPLANETARY communication has been a frequent theme for writers of science fiction. Its problem has long engrossed scientific minds. This month *AMAZING STORIES* presents on its back cover its conception of one method by which we may communicate with intelligent beings on other planets.

By producing artificial displays in the upper atmosphere comparable to the Northern Lights, and using their controlled pulsations as a sort of Interplanetary Morse Code!

The aurora borealis and its counterpart in southern latitudes, the aurora australis, is produced by the combined activity of the sun and the earth's magnetic field. Radiation from the sun is constantly spreading through space swarms of positive, negative and neutral atomic particles of every kind, including electrons. The earth is a feeble magnet, with a field extending far out into space and with lines of force between the north and south magnetic poles.

When, in the laboratory, electrons are projected obliquely to a magnetic field, each one will describe a helix or corkscrew-shaped path around it. In this manner electrons shot earthward from the sun are trapped by the earth's magnetic field, made to spiral downward around the lines of force until they meet the upper atmosphere over one of the magnetic poles. There occurs the next step in the production of the aurora.

In colliding with molecules of the upper atmosphere, the speed of the electrons may be sufficient to ionize those molecules, to knock other electrons from them, leaving them positively charged. Such positive ions must combine again with other electrons—and that recombination is attended with radiation.

Thus electrons spiraling in one direction or the other until they arrive over one of the magnetic poles, cause by ionization either the aurora borealis or the aurora australis.

Can we duplicate this effect? The answer is we have—and it is blazed in red, yellow, blue and green from a million vivid neon signs whose tubes, filled with gas ionized with high voltage, bespangle our every city and town with man-made auroras!

To produce similar radiation on a large scale

in the atmosphere is of course not so simple. Though neon signs actually utilize other gases besides neon, such as helium, all of them together compose but a small part of free air. Nitrogen and oxygen are the chief constituents of the upper atmosphere as of the lower, and both gases, which photographs of the spectrum of the aurora show are involved, must be similarly excited if we are to have any wide-scale effect. But both have already been simulated in the laboratory to produce auroral radiation!

The only question then is whether we can meet the actual conditions of the upper atmosphere—and again the answer is already known. Other laboratory tests with tubes containing air at low pressure—the actual medium and under the same conditions in which the natural aurora occurs—show that radio waves of suitable frequency will produce a similar strong glow high in the ionosphere!

And at least two existing radio stations, Cincinnati's 500-kilowatt WLW and Moscow's station of the same power, are strong enough to put out waves of the necessary * frequency!

Our only remaining problems, then, are mechanical ones. First, what equipment shall we use? There is no possible doubt that it is radiation from the sun which produces auroras. Cosmic rays may be disregarded, as well as the action of any force other than the earth's magnetic field, for auroras, magnetic storms,* and sunspots follow an identical pattern of increase and decrease from year to year in both number and intensity! But scientists are unwilling to declare that any particular one of all the possible projectiles from the sun is responsible for the aurora in every case.

(Cont'd on Page 146)

** Note: The gyration frequency of an electron in the earth's magnetic field. Since this article was written, however, WLW has reduced its power.—Ed.*

** Note: Magnetic storms are not accompanied by lightning and thunder. They are disturbances in the earth's magnetic field which interfere with radio transmission and the operation of telephones and telegraph lines.—Ed.*

Therefore our apparatus for bombarding the upper atmosphere consists not only of radio transmitting installations and huge, specially-designed cathode tubes, for producing the two kinds of bombardment already proved effective in causing ionization radiation, but includes cyclotrons, gigantic induction tubes and equipment to supply all the other possibly effective types of atomic particles. We shall be prepared with everything from positrons and protons to neutrons and deuterons.

Our second and final problem is the disposition of our physical equipment. Where and in how many places shall we set up our atomic siege guns? Auroras generally occur in the ionosphere, between sixty and two hundred and fifty miles above the surface of the earth. Lowest altitude recorded is forty miles, the highest more than six hundred! Their extent is equally great. A display of the Northern Lights early last year was seen at such widely separated places as England and Austria, Portugal and Holland, and in the United States farther south than Baltimore; and in 1872, a year

of even greater sunspot activity, auroras occurred simultaneously in both arctic and antarctic regions, girdling the globe! A display of similar magnitude is obviously desirable for purposes of interplanetary communication, and at first glance it seems a huge task to duplicate it.

But the ionizing projectiles, it must be remembered, will be grasped in the earth's magnetic field. Aimed at the zenith, they will slide down the lines of force both north and south and become widely distributed. Therefore, so long as our installations provide sufficient bombardment, they can be sharply limited in number and placed wherever convenient!

Thus do we have at last the actual means of long-dreamed interplanetary communication—a thing to stagger the mind, to take hold not only of the cultivated imaginations of readers of science fiction but of the imagination of every man, however untrained or uninspired.

This is not a future science story but **AMAZING STORIES'** prediction—based on *facts*—tomorrow!

ILLUSTRATION CONTEST WINNERS

Here are the winners in the August Illustration Contest, on the best letter on the subject "If I Were Editor." Due to the many good letters we have awarded more than the scheduled prizes. A complete list of winners follows:

First Prize

Robert E. Fair, 125 E. Main Street, Newport, Tenn. (Front cover—June, 1939.)

Second Prize

Miss Frances E. Bedford, Billings, Missouri. (Back cover—July, 1939.)

Third to Thirty-fourth Prizes

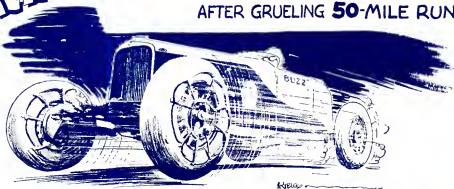
Jack Heaton, 113 Ormond Street, Brockville, Ont., Canada; Joseph Ripa, 100 Warner Street, Newport, R. I.; George M. Aylesworth, Box 508, Mackinaw City, Michigan; Bob Tucker, P. O. Box 260, Bloomington, Illinois; James E. Wilson, Hunter's Cottages, R. No. 1, Hot Springs, Arkansas; George P. Calvert, 335½ Woodland Ave., Williamsport, Pennsylvania; Robert W. Lowndes, 71 Carroll Street, Springdale, Connecticut; Lewis Martin, 1258 Race Street, Denver, Colorado; Fred Hurter, Red Rock, Ontario, Canada; Jack Darrow, 3847 N. Francisco Ave., Chicago, Illinois; Arthur L. Widner, Jr., Box 122, Bryantville, Massachusetts; Willard Dewey, 1005 Charles Street, Everett, Washington; C. E. Wilcox, 4414 Ellis Street, Chicago, Illinois; Frank Brent Eason, 925 Lucile Ave., S. W., Atlanta, Georgia; R. Page Bowles, Jr., Cartersville, Virginia; Bob Camden, 7357 North Damen, Chicago, Illinois; Tom Wright, R. F. D. No. 1, Box 129, Martinez, California; Melvin Silberschein, 406 Ocean View Avenue, Brooklyn, New York; Gerald M. Meader, 99 Main Avenue, Rumford, Maine; Arthur Saha, 2828 3rd Ave., Hibbing, Minnesota; Robert Murphy, 2711 S. Franklin, Muncie, Indiana; Paul Griffith, Center Ave., West View, Pittsburgh, Pennsylvania; Leonard Panske, 2205 W. Iowa Stret, Chicago, Illinois; Jack Sweeney, 1252 N. Main Street, Kokomo, Indiana; Billy Holmes, 1513 Dunlany Street, Houston, Texas; Eugene Etheridge, 1930 Lewis Ave., Fresno, California; Robert Ostermann, 535 N. Waiola Ave., La Grange Park, Illinois; Edwin Symonovitch, 16 Dorchester Street, Worcester, Massachusetts; Betty Sacks, 127 So. Blakely Street, Dunmore, Pennsylvania; Dick Sullivan, 606 North Magnolia, Burbank, California; Douglas Robinson, No. 2 Conestoga Road, Garrett Hill, Pennsylvania; Henry M. Lethert, 2139 Stanford Ave., St. Paul, Minnesota.

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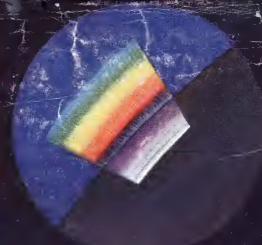
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INTERPLANETARY COMMUNICATION

Ever since the discovery of the so-called Martian canals, and the invention of radio, the problem of communicating with other worlds has been much discussed. Recent laboratory experiments with artificially induced aurora point the way toward a very possible means of communication. Aurora displays, such as those shown being artificially created here could be seen by astronomers on other worlds, and by controlled pulsation, could be used to send signals in Morse code, or by any other dot-dash system. See page 145 for details.



The Artificially Pulsating Aurora as seen through a telescope on Mars